

An update of *Zelotibia* (Araneae, Gnaphosidae), a spider genus with a species swarm in the Albertine Rift

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Abstract

The spider genus *Zelotibia* Russell-Smith & Murphy, 2005 is reviewed. Eight new species, all from forest areas in the Albertine Rift, are described: they are *Z. angelica* (♀), *Z. curvifemur* (♂♀), *Z. fosseya* (♀), *Z. johntony* (♀), *Z. kanama* (♀), *Z. kibira* (♀), *Z. lejeunei* (♂♀) and *Z. subsessa* (♀). The unknown female of *Z. major* Russell-Smith & Murphy, 2005 is described. *Z. similis* Russell-Smith & Murphy, 2005 is synonymized with *Z. paucipapillata* Russell-Smith & Murphy, 2005. An illustrated key to the species of the genus is provided. The genus now contains 22 species, 19 of which are concentrated in the Albertine Rift, confirming the biodiversity hot-spot status of that area.

Keywords

Albertine Rift, Central Africa, description, Gnaphosidae, mountain rainforest, species swarm, *Zelotibia*

Introduction

The genus *Zelotibia* was described by Russell-Smith and Murphy in 2005 and included not less than 15 species. According to these authors, the genus is largely confined to Central Africa with two outliers in Kenya and Tanzania. The present paper was initially

intended to study the representatives of Burundi but since material from other localities in the Albertine Rift became available it was extended. For Burundi, Russell-Smith and Murphy (2005) described *Zelotibia major*, *Zelotibia similis* so far known from Kibira, the only mountain rainforest of Burundi and *Zelotibia filiformis*, known from the DR Congo, and from the mountain forest of Mpotsa in Burundi (paratype).

Since then, an extensive sampling program was carried out by the senior author in the rainforest of Kibira between 2005 and 2008. This yielded several additions to the list of the species of *Zelotibia* for this mountain forest, in the first instance the species *Zelotibia paucipapillata* Russell-Smith & Murphy, 2005 and *Zelotibia flexuosa* Russell-Smith & Murphy, 2005. Both sexes of *Zelotibia major* of which the female was unknown, were collected. On the basis of specimens originating from the rainforest of Kibira, it was possible to establish the synonymy between *Zelotibia paucipapillata*, only known from males, and *Zelotibia similis* for which the male was unknown. *Zelotibia paucipapillata* has page priority. Eight new species are described in the present paper.

The wealth of species in this genus affirms the important specific richness of the genus *Zelotibia* in the afromontane forests of the Albertine Rift.

Material and methods

The majority of the material was obtained during field work in afromontane forest of the Kibira National Park in Burundi. Most specimens were captured using pitfall traps and conserved in 75 % ethanol. Other samples from different localities in the Albertine Rift in Central Africa, were available in the collections of MRAC (Musée Royal d'Afrique Centrale, Tervuren) and are included in this study. The holotypes and most paratypes are deposited in MRAC. Some paratypes will be stored in INECN (Institut National pour l'Environnement et la Conservation de la Nature, Bujumbura).

All measurements are in millimetres (mm). The epigyne and male palps are observed and drawn under a stereomicroscope Zeiss Stemi 2000. Specimens were observed and measured with a Leica M10 and WILD M8 stereomicroscope. Photographs were taken with a Leica MZ16 using LAS automontage software. Epigynes were photographed with a Leica M12 stereomicroscope and subject to automontage with Syncroscopy software. A male palp was expanded by soaking in lactic acid.

Distribution maps were prepared using the DIVA-Gis software.

Abbreviations:

| | |
|------------|--------------------------|
| ALE | anterior lateral eyes |
| AME | anterior median eyes |
| d | dorsal |
| dl | dorsolateral |
| DTA | Distal Tegular Apophysis |
| dw | distal whorl |
| F | femur |

| | |
|--------------|--|
| INECN | Institut National pour l'Environnement et la Conservation de la Nature, Bujumbura |
| MA | Median Apophysis |
| MRAC | Musée Royal de l'Afrique Centrale, Tervuren |
| Mt | metatarsus |
| P | patella |
| pl | prolateral |
| PLE | Posterior lateral eyes |
| PME | Posterior median eyes |
| rl | retrolateral |
| RTA | Retrolateral Tibial Apophysis |
| T | tarsus |
| T | trochanter |
| v | ventral |

Systematics

Zelotibia Russell-Smith & Murphy, 2005

Diagnosis. (modified from Russell-Smith and Murphy 2005)

Small to medium sized zelotine gnaphosids with metatarsal preening comb on legs III and IV. Females are diagnosed by spermathecae with wide ducts directed antieriad which often gives them a flask-shaped outline, and with the genital openings located in the anterior half of the epigyne. Males are characterized by a palpal tibia with modifications, the retrolateral tibial apophysis or papillae, that extend beyond the anterior margin of the segment.

A differential diagnosis of *Zelotibia* is provided in Russell-Smith and Murphy (2005) listing the main differences with related species in the Zelotinae.

Morphology of genitalia. Our interpretation of the genital structures is quite different from that of Russell-Smith and Murphy (2005). These authors assume that in several species the embolus is hidden by what they call the distal tegular apophysis (DTA). This is the case in *Z. kaibos* (their fig. 4B), *Z. cultella* (fig. 8B), *Z. dolabra* (fig 12B). However, dissection of the palp of *Z. curvifemur* sp. n. (Fig. 13B) has shown that the large terminal sclerite is the embolus with an albeit unusual morphology. The dark elongate structure on the prolateral side of the bulbus is in fact the sclerotised margin of the tegulum and not the embolus. The same applies to the structure of the palp of *Z. scobina*. The so-called DTA is in fact the embolus and what was supposed to be the embolus running parallel with the former is the sclerotised distal margin of the tegulum. The PTA of Russell-Smith & Murphy is here called the median apophysis (MA). As regarding the epigyne we have used the term copulatory ducts instead of spermathecal ducts and copulatory openings instead of genital openings.

***Zelotibia angelica* sp. n.**

urn:lsid:zoobank.org:act:88950C23-957D-4395-B52B-889FE7FF51B8

Figs 1, 17, 27, 38

Material examined. Holotype. Female. BURUNDI: Parc National de la Kibira, Mt Musumba, 2°52’S 29°30’E, 10.IV.2008, 2252m, ptifalls, forest with *Carapa grandiflora* and *Polyscias fulva*, Nzigidahera Benoît (MRAC 226243).

Paratypes. 1♀: 25.VI.2008, remainder as holotype (INECN); 1♀: 10.IV.2008, site 3, forest with *Hagenia abyssinica*, remainder as holotype (MRAC 226344); 1♀: 25.X.2008, site 3, forest with *Hagenia abyssinica*, remainder as previous (MRAC 226345).

Diagnosis. Females of *Zelotibia angelica* are recognized by the epigyne showing two large lateral, slightly curved slits extending forward to the margin.

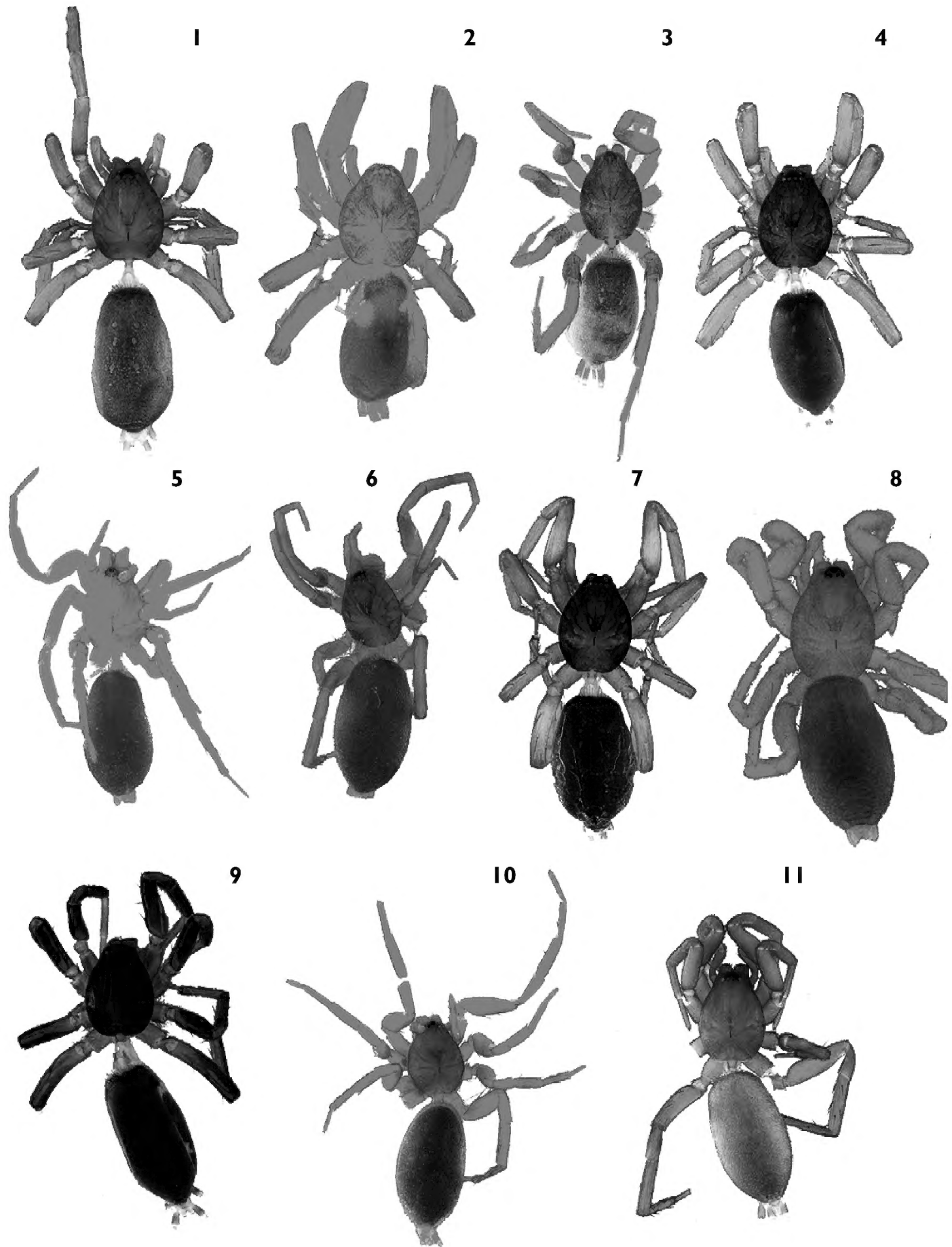
Etymology. The specific name “*angelica*” refers the pattern of the Epigyne, reminding the wings of an angel.

Description. Female (Fig. 1): Total length 6.00, **Carapace** 2.00 long, 1.68 wide. Carapace chestnut brown with grey striae radiating from fovea. **Eyes** AME area dark; anterior row recurved, posterior row straight. AME: 0.08; ALE: 0.11; PME: 0.08; PLE: 0.1; AME-AME: 0.08; AME-ALE: 0.02; PME-PME: 0.05; PME-PLE: 0.02. **Chelicerae** chestnut brown; with long bristles. **Sternum** brownish orange, with darker margins provided with some setae. **Labium** coloured brownish orange. **Legs** coloured as sternum, metatarsi III and IV with ventral preening comb at tip. **Abdomen** Dorsum dark grey, with dorsal scutum; tuft of bristles at anterior end; venter pale yellowish grey. **Spinnerets** pale yellowish grey. **Epigyne** (Figs 17, 27) with two long slits along lateral margin, opening towards the centre, extended to front; copulatory openings long lateral slits; copulatory ducts fairly long, sinuous, ending into the rear of fairly small, globular, adjacent spermathecae.

| Legs spination | | | | |
|----------------|--------|-----|-------------------|--------------------|
| Legs | F | P | T | Mt |
| I | d1 rl1 | - | - | v2-1 |
| II | d1 rl1 | - | v1 | v2-1 |
| III | d2 pl1 | pl1 | d2 pl2 rl2 v2-2 | d2-2 Pl3 rl3 v2-1 |
| IV | d2 pl1 | - | d1 pl2 rl2 v1-2-2 | d2-2 Pl3 rl3 v-2-2 |

Male unknown.

Distribution. Known only from the type locality Musumba in Kibira National Park, Burundi (Fig. 38).



Figures 1-11. Habitus of *Zelotibia* 1 *Zelotibia angelica* sp. n. female; 2 *Z. curvifemur* sp. n., female; 3 male; 4 *Z. fosseya* sp. n., female; 5 *Z. johntony* sp. n., female; 6 *Z. kanama* sp. n., female; 7 *Z. kibira* sp. n., female; 8 *Z. lejeunei* sp. n., female; 9 *Z. major*, female; 10 *Z. paucipapillata*, female; 11 *Z. subsessa* sp. n., female.

***Zelotibia curvifemur* sp. n.**

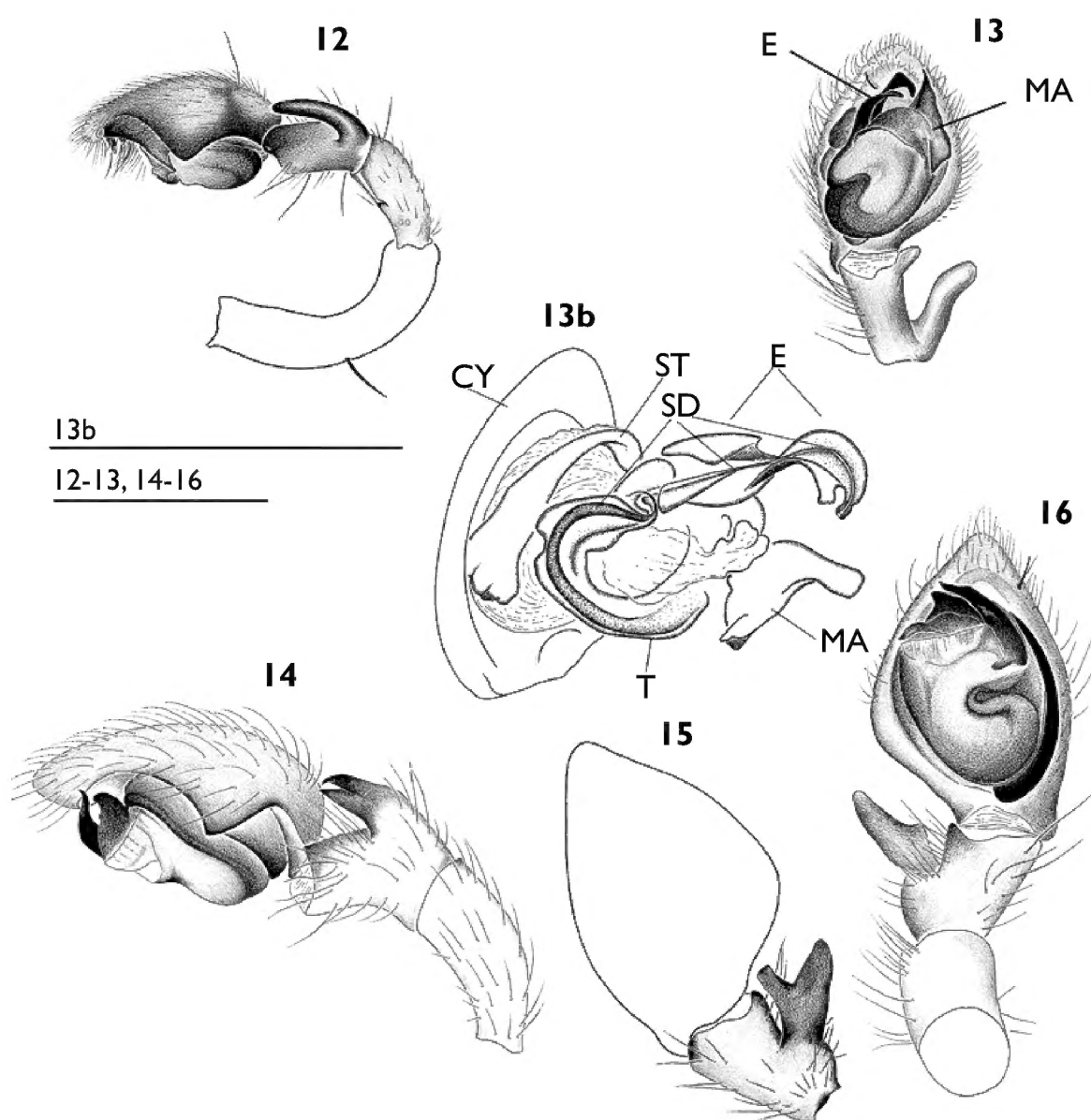
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Figs 2, 3, 12, 13, 18, 28, 38

Material examined. Type material. Holotype. Male. BURUNDI: Parc National de la Kibira, Forêt de Rwegura, 02° 55'S 029° 31'E, 28.XII.2004, 1970 m, pitfalls, Nzigidahera Benoît (MRAC 222242).

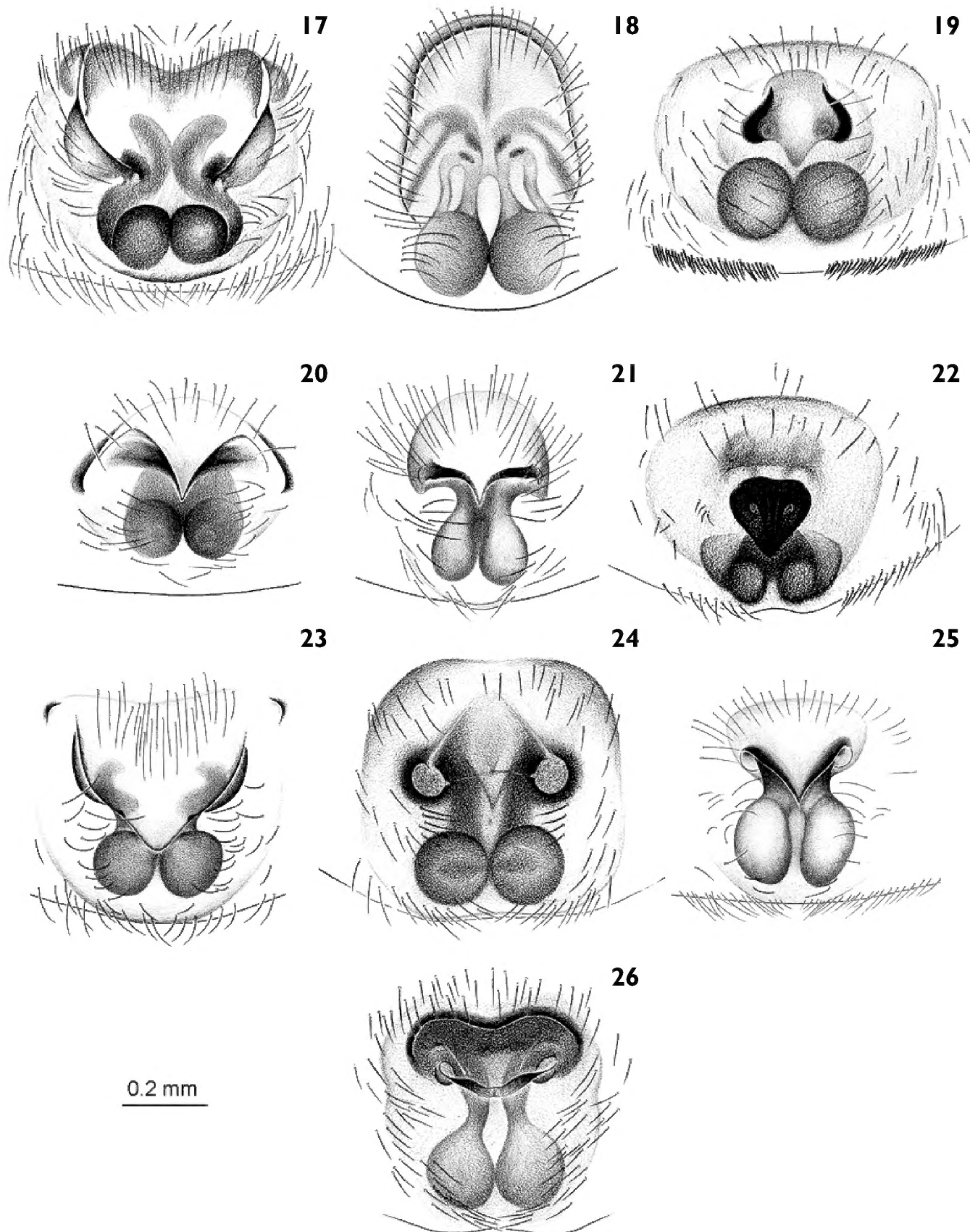
Paratypes. BURUNDI: Parc National de la Kibira, Forêt de Rwegura, 02° 55'S 029° 31'E, *Parinari* forest, pitfall, Nzigidahera Benoit; 1♀: 15.VII.2005, 2120 m (MRAC 222241); 1♂: tea plantation, pitfall, 28.VII.2005, 1970 m.

Other material. All from BURUNDI, Parc National de la Kibira, Rwegura, Mt Musumba, 02° 52'S 029° 30'E, Nzigidahera B. site 1, mountain heather, *Philippia benguelensis*, 2650 m: 1♂: 25.VI.2008, site (MRAC 226272); 1♂: 10.XII.2008, (MRAC 226278); 1♂: 10.VII.2008, site 1, mountain heather *Philippia benguelensis* (MRAC 226291); 2♂, 1♀: 10.I.2009, (MRAC 226298); 1♀: 25.X.2008, (MRAC 226300);



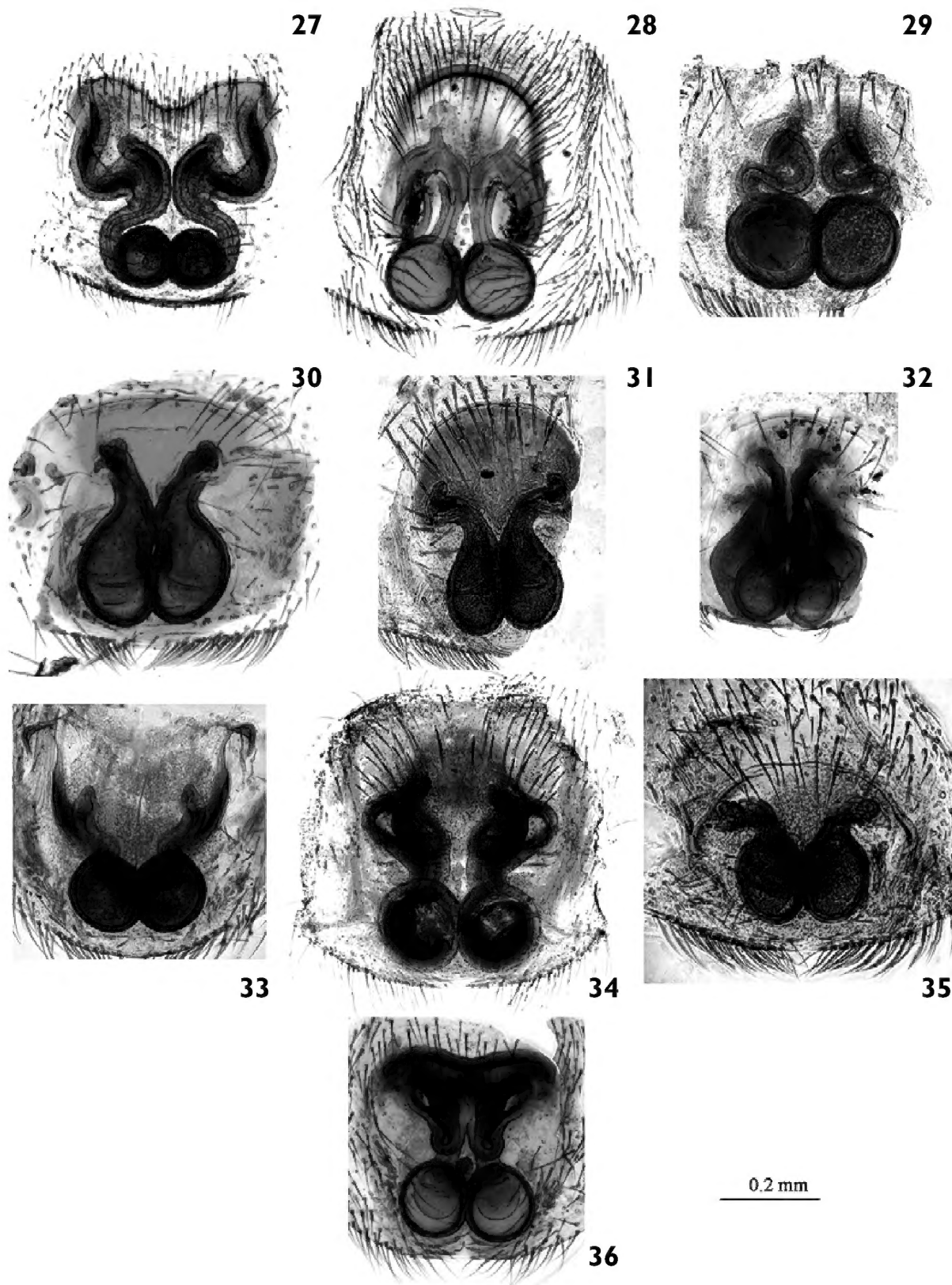
Figures 12-16. *Zelotibia curvifemur* sp. n. **12** Male palp, retrolateral view; **13** Male palp, ventral view; **13b.** Male palp, expanded; *Zelotibia lejeunei* **14** Male palp, retrolateral view; **15** Male palp, dorsal view; **16** male palp, ventral view. CY: cymbium; E: embolus; MA: median apophysis; SD: sperm duct; ST: subtegulum; T: tegulum. (scale bar 0.5 mm).

1♂: 25.VIII.2008, (MRAC 226309); site 2, forest with *Hagenia abyssinica*, 2548m: 1♀: 10.III.2008, (MRAC 226274); 1♂: 25.V.2008 (MRAC 226285); 2♂: 25.II.2008 (MRAC 226286); 1♀: 10.X.2008 (MRAC 226288); 1♀: 10.I.2008 (MRAC 226292); 1♂: 10.IX.2008 (MRAC 226303); site 3, forest with *Hagenia abyssinica*, 2444 m: 1♂ 1♀: 10.IX.2008; 1♂ 1♀ 10.IX.2008, (INECN); site 4, forest with *Macaranga neomildbraediana* and *Polyscias fulva*, 2352m: 3♀: 10.III.2008, (MRAC 226270); 1♂: 25.VII.2008, (MRAC 226271); 1♀: 25.XI.2008, (MRAC 226273); 2♂: 10.VIII.2008,



Figures 17-26. Epigynes, ventral view **17** *Zelotibia angelica* sp. n.; **18** *Z. curvifemur* sp. n.; **19** *Z. fosseyae* sp. n., female; **20** *Z. johntony* sp. n.; **21** *Z. kanama* sp. n.; **22** *Z. kibira* sp. n. **23** *Z. lejeunei* sp. n. **24** *Z. major*; **25** *Z. paucipapillata*; **26** *Z. subsessa* sp. n., (scale bar 0.2 mm).

(MRAC 226277); 1♂, 1♀: 10.VI.2008, (MRAC 226289); 1♀: 25.XII.2008, (MRAC 226297); 1♀: 10.X.2008, (MRAC 226302); 1♂: 25.VI.2008, (MRAC 226304); 1♀: 25.V.2008, (MRAC 226307); 4♀: 10.II.2008, (MRAC 226308); 3♀: 25.VI.2008, (MRAC 226311); 1♂, 1♀: 10.V.2008, (MRAC 226312); 1♂, 3♀: 25.IV.2008, (MRAC 226313); 1♂: 25.III.2008, (MRAC 226317); 2♀: 26.I.2008 (MRAC 226319); 1♂: 26.I.2008, (MRAC 226320); 1♀: 10.III.2008 (MRAC 226321); 3♂, 1♀: 10.III.2008, (MRAC 226323); 1♂: 26.I.2008, (MRAC 226324); 3♂, 4♀: 25.II.2008, (INECN); 3♂: 10.II.2008, (INECN); site 5, forest with *Carapa grandiflora* and *Poly-*



Figures 27-36. Epigynes, ventral view **27** *Zelotibia angelica* sp. n.; **28** *Z. curvifemur* sp. n.; **29** *Z. fosseyae* sp. n., female; **30** *Z. johntony* sp. n.; **31** *Z. kanama* sp. n.; **32** *Z. kibira* sp. n. **33** *Z. lejeunei* sp. n. **34** *Z. major*; **35** *Z. paucipapillata*; **36** *Z. subsessa* sp. n., (scale bar 0.2 mm).

scias fulva, 2252m: 3♂: 25.VI.2008 (MRAC 226279); 1♂: 25.XI.2008(MRAC 226287); 3♂: 25.VIII.2008(MRAC 226293); 1♀: 10.VIII.2008(MRAC 226299); 2♂: 10.III.2008(MRAC 226301); 1♂, 1♀: 25.XI.2008(MRAC 226305); 1♂: 25.IV.2008(MRAC 226310); 4♀: 10.VI.2008(MRAC 226314); 3♂: 10.V.2008(MRAC 226315); 2♀: 10.III.2008(MRAC 226316); 3♂, 1♀: 25.V.2008(MRAC 226325); 2♂, 1♀: 25.V.2008(MRAC 226326); 2♀: 10.XI.2008(MRAC 226327); 4♀: 10.IV.2008 (MRAC 226328); 1♂: 25.III.2008(MRAC 226329); 1♂: 10.IV.2008(MRAC 226330); 1♀: 25.II.2008(MRAC 226331); 1♂, 1♀: 10.VII.2008 (INECN); 2♀: 10.V.2008 (INECN); 3♀: 25.VII.2008 (INECN); 5♂: 10.26.I.2008 (INECN); 5♂: 25.III.2008 (INECN); site 6, forest with *Carapa grandiflora* and *Polyscias fulva*, 2150m: 1♂: 10.VII.2008, (MRAC 226275); 2♀: 10.III.2008, (MRAC 226276); 1♂, 1♀: 10.V.2008, (MRAC 226280); 1♂: 10.XII.2008, (MRAC 226281); 1♂, 1♀: 10.IV.2008, (MRAC 226282); 2♂: 26.I.2008, (MRAC 226284); 2♂: 25.VI.2008, (MRAC 226290); 1♂: 25.XII.2008, (MRAC 226294); 1♂: 25.X.2008, (MRAC 226296); 1♀: 23.III.2008, (MRAC 226318); 2♀: 25.VII.2008, (MRAC 226322); site 7, tea plantation, 2100m: 2♂: 10.XII.2008, (MRAC 226283); 1♂: 25.IV.2008 (MRAC 226295); 5♂: 25.III.2008 (INECN); 1♂: 10.III.2008 (MRAC 226269).

Diagnosis. **Males** of *Zelotibia curvifemur* are recognized by the strongly curved femora, but mainly by the large RTA, originating from the proximal base of the tibia, and the broad embolus which is deeply incised at the tip. **Females** are characterized by the long, broad depression and the course of the entrance ducts.

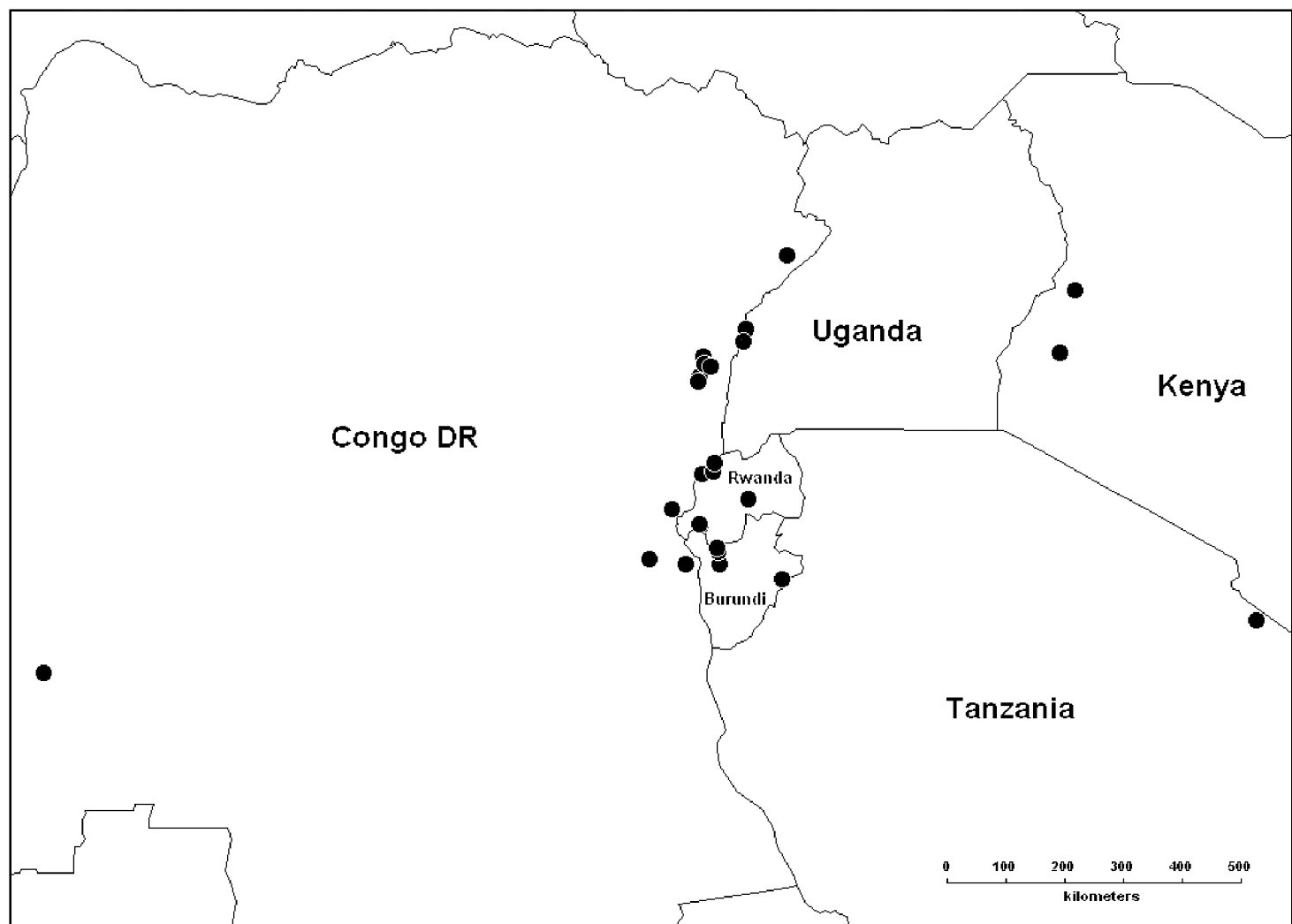


Figure 37. All known localities of *Zelotibia* spp.

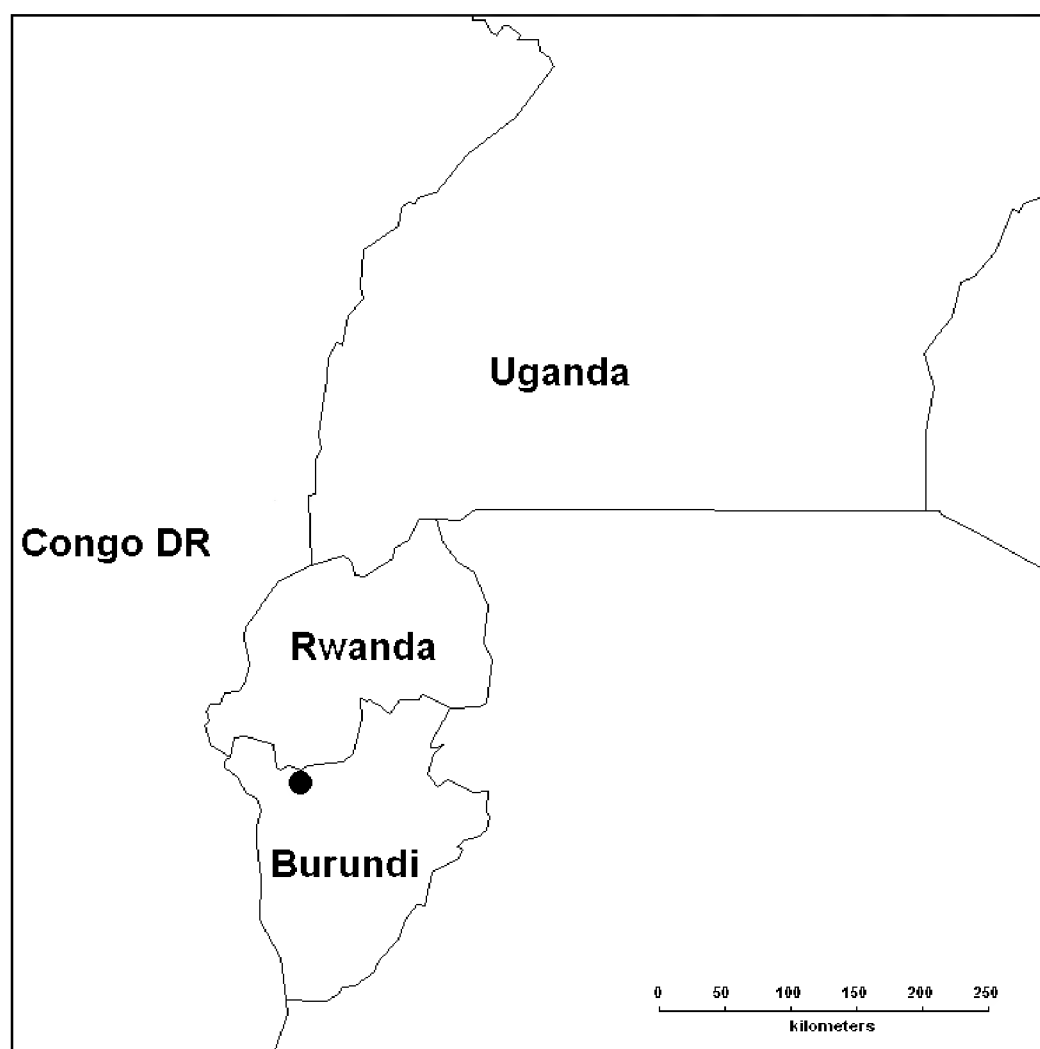


Figure 38. Type locality of *Zelotibia angelica*, *Z. curvifemur*, *Z. fosseyae*, *Z. kibira* and *Z. subsessa*

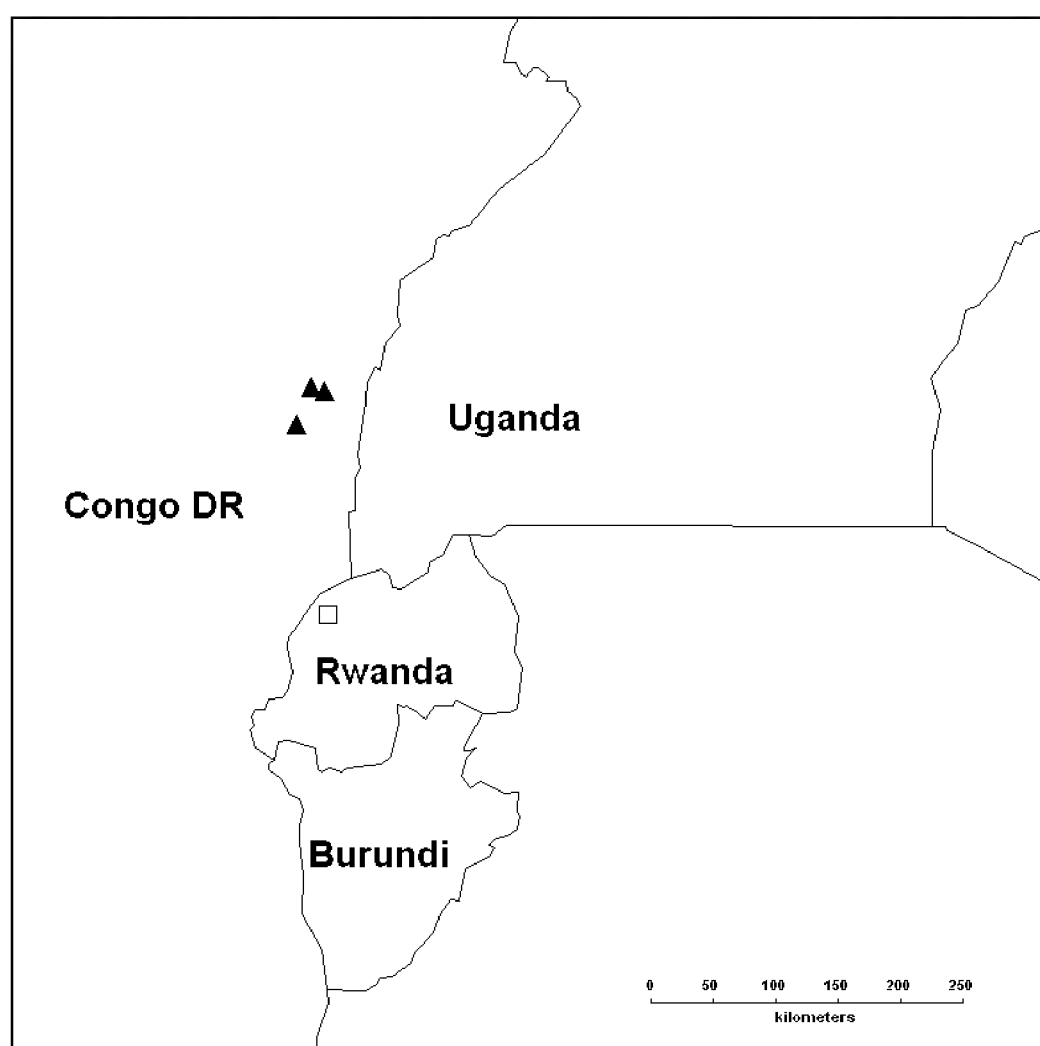


Figure 39. Localities of *Zelotibia johntony*▲ and *Z. kanama*□

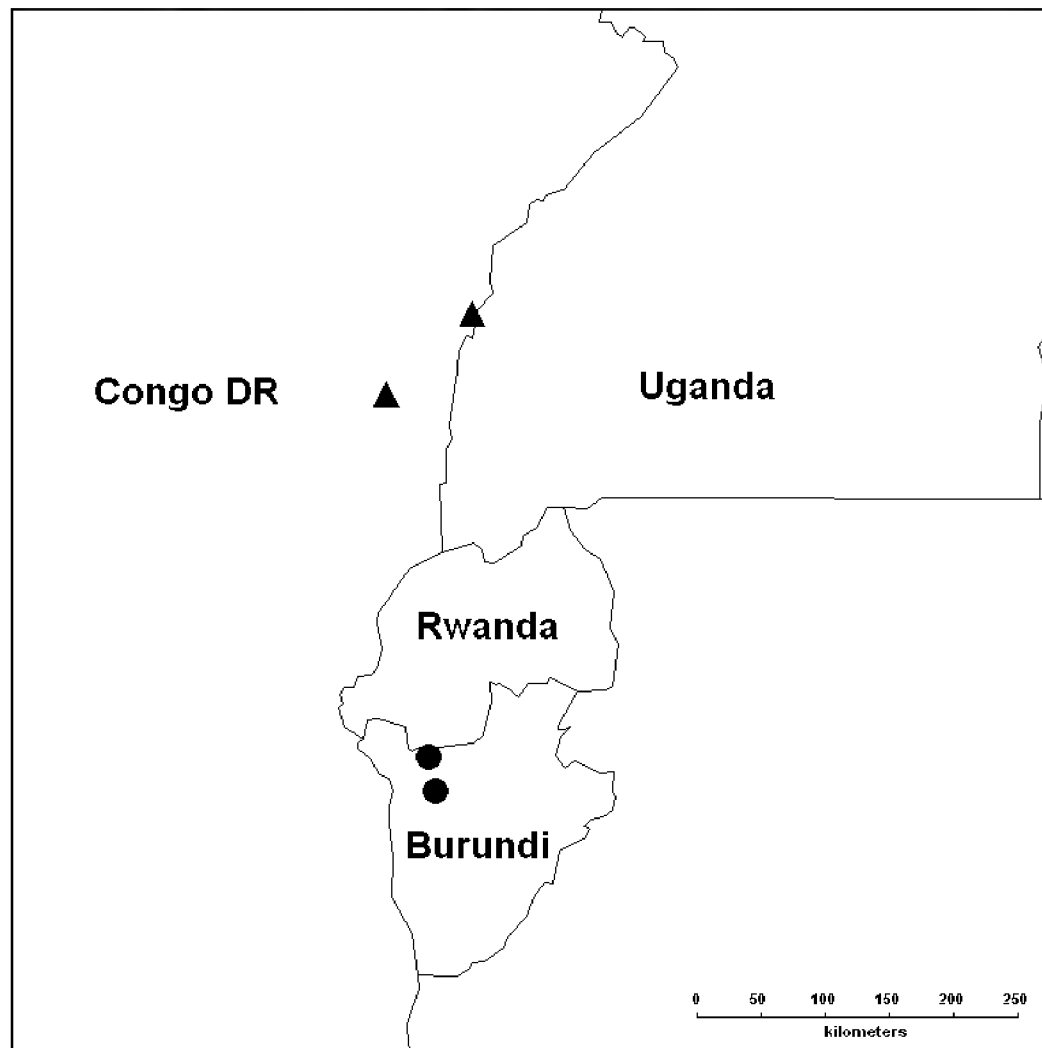


Figure 40. Localities of *Zelotibia lejeunei* ▲ and *Z. major* ●

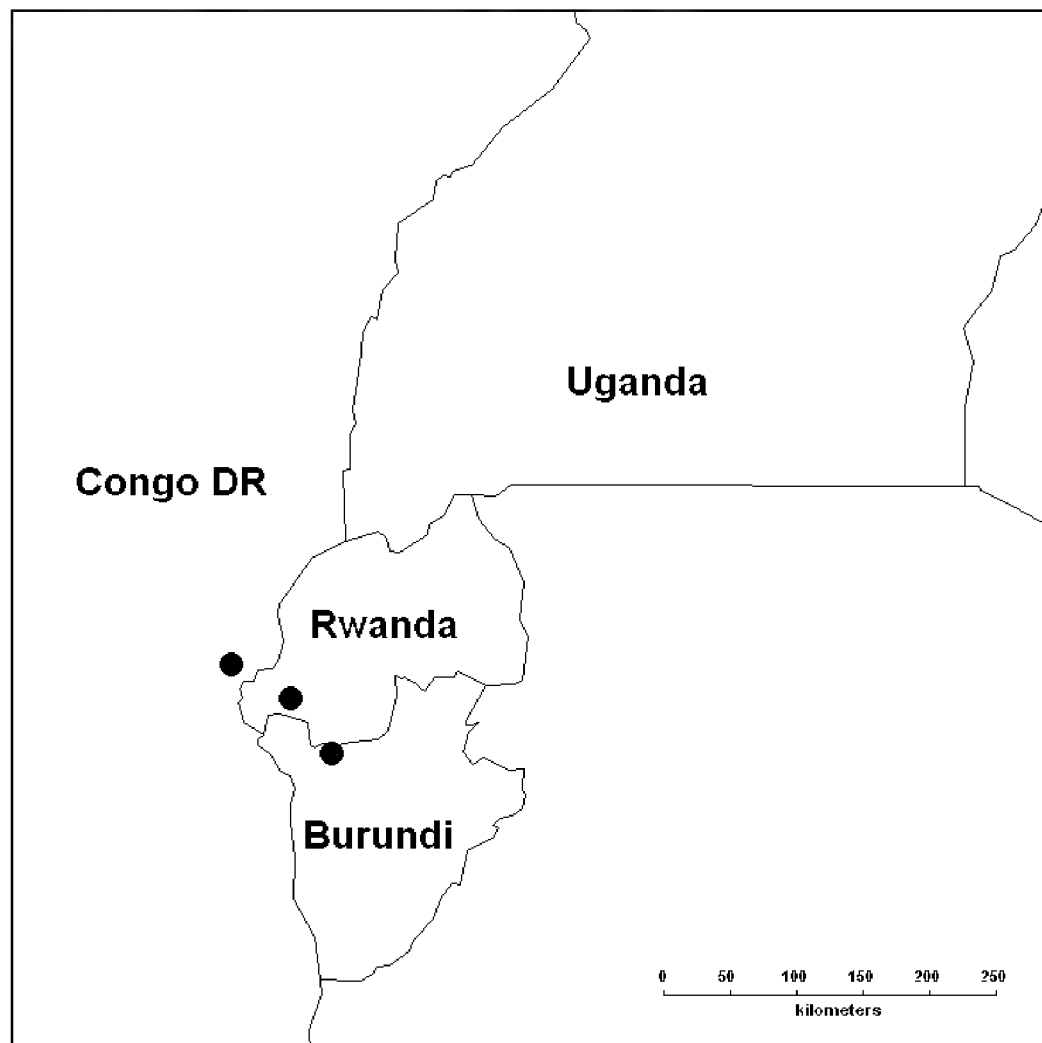


Figure 41. Localities of *Zelotibia paucipapillata*.

Etymology. The specific name *curvifemur* is a noun in apposition referring to the strongly curved femora.

Description. **Male** holotype (Fig. 3). Total length 7.75, **Carapace** 2.50 long and 2.10 wide. **Carapace** dark brown suffused with dark grey along radiating striae. **Chelicerae** dark brown. **Sternum** and **labium** pale brown. **Eyes**, AME area dark. Both eye rows straight. Posterior eyes oval. AME: 0.07; ALE: 0.10; PME: 0.07; PLE: 0.10; AME-AME: 0.07; AME-ALE: 0.02; PME-PME: 0.05; PME-PLE: 0.02. **Chelicerae**: both margins with three teeth. **Sternum** with long, dark bristles along margin. **Labium** 0.9 times longer than wide. **Legs** pale brown. Metatarsi III and IV with ventral preening comb at tip. Tarsi cylindric. **Abdomen** Dorsum dark grey; with four pale points in central, longitudinal row in anterior half; venter pale grey. **Spinnerets** pale grey. **Palp** Femora strongly curved (Fig. 12); tibia with long, curved, RTA, originating at proximal base of tibia, with flat ventral side, rounded tip (Fig. 13). Retrolateral margin of cymbium with triangular extension. Embolus large, curved, deeply incised at tip; dorsal prong with hooked tip. DTA elongate, with both anterior and posterior extremities pointed.

| Leg spination | | | | |
|---------------|-----------|-----|-------------------|-------------------|
| Legs | F | P | T | Mt |
| I | d2 rl1 | - | v1-1 | v2-2 |
| II | d2 rl1 | - | v2-2-2 | v2-2 |
| III | d2pl 2rl2 | - | d2 rl2 pl2 v1-2-2 | d2-2 pl3 rl3 v2 |
| IV | d2pl 1rl1 | pl1 | d2 rl2 pl2 v2-2-2 | d2-2 pl2 rl2 v2-2 |

Female. (MRAC 222241)(Fig. 3) Total length 7.50; carapace 2.80 long and 2 wide. Colour pattern similar but in general paler brown than in male.

| Leg spination | | | | |
|---------------|-----------|---|-------------------|-------------------|
| Legs | F | P | T | Mt |
| I | d2 rl1 | - | v1-1 | v2-2 |
| II | d2rl1 | - | v1-2-1 | v2-2 |
| III | d2pl1 rl1 | - | d2 rl3 pl2 v2-2-2 | d2-2 rl3 v2 |
| IV | d2pl1 | - | d2 pl2 rl2 v2-2-2 | d2-2 pl3 rl3 v2-2 |

Epigyne (figs 18, 28): central depression large, slightly longer than broad; copulatory ducts forming an M-shaped pattern in transparency; anterior part with very short, straight side ducts.

Spermathecae large, globular, adjacent.

Distribution. Known only from the type locality, Rwegura, Burundi (Fig. 38).

***Zelotibia fosseyae* sp. n.**

urn:lsid:zoobank.org:act:F14DA492-316E-4DDE-9B0D-A232193DBFA0

Figs 4, 19, 29, 38

Material examined. Type material Holotype. Female. BURUNDI: Parc National de la Kibira, Mont Musumba, 2°52' S 29°30'E, 10.VI.2008, site 2, 2548 m, forest with *Hagenia abyssinica*, pitfalls, Nzigidahera Benoît (MRAC 226255).

Paratype. 1♀: 10.VI.2008, remainder as holotype (MRAC 226404).

Other material. All from BURUNDI, Parc National de la Kibira, Rwegura, Mt Musumba, 02°52'S 029°30'E, Nzigidahera B., 1♀: 10.X.2008, site 1, 2650 m, mountain heather, *Philippia benguelensi* (INECN); 1♀: 26.I.2008, remainder as previous (MRAC 226343); 1♀: 10.III.2008 (MRAC 226341); 1♀: 25.XII.2008 (MRAC 226342); 1♀: 26.I.2008 (MRAC 226343); 1♀: 10.I.2009, site 2, 2548m, forest with *Hagenia abyssinica*, remainder as previous (INECN); 1♀: 25.VII.2008, remainder as previous (INECN).

Diagnosis. Females of *Zelotibia fosseyae* are recognized by the epigyne with small pointed scape with sinuous, strongly sclerotised sides above the copulatory slits.

Etymology. The specific name “*fosseyae*” is a patronym in honour of Diane Fossey, who studied Mountain Gorillas for many years in the Virunga national Park of Rwanda.

Description. Female holotype (Fig. 4): Total length 5.20, carapace 2.00 long, 1.60 wide. **Carapace** chestnut brown suffused with black, with darker striae radiating from short fovea. **Eyes** AME area dark, anterior row recurved, posterior row straight. AME: 0.08; ALE: 0.11; PME: 0.08; PLE: 0.1; AME-AME: 0.07; AME-ALE: 0.02; PME-PME: 0.05; PME-PLE: 0.02. **Chelicerae** chestnut brown. **Sternum** pale brownish orange, with long hairs around margin. **Labium** pale brownish orange. **Legs** pale brownish orange. Metatarsi III and IV with ventral preening comb at tip. **Abdomen** Dorsum dark grey, with dorsal scutum; tuft of bristles at anterior end; venter yellowish grey. **Spinnerets** pale grey. **Epigyne** (Figs. 19, 29) with small pointed scape in anterior half, its sides sinuous, strongly sclerotised, hiding, slit-shaped, copulatory openings; posterior margin with dense row of short setae. Copulatory ducts with short diverticulum near openings, S-shaped, ending in large, globular, adjacent spermathecae.

| Legs spination | | | | |
|----------------|-----------|-----|-------------------|--------------------|
| Legs | F | P | T | Mt |
| I | d2 pl1 | - | v1 | v2-2 |
| II | d2 pl1 | - | v1 | v2-2 |
| III | d2 pl1rl1 | pl1 | d2 pl1 rl1v1-2-2 | d1 pl3 rl3 v2 |
| IV | d2 pl1 | - | d1pPl2 rl2 v1-2-2 | d2-2 pl3 rl3 v-2-2 |

Male unknown.

Distribution. Known only from the type locality Mt Musumba in Kibira National Park, Burundi (Fig.38).

Zelotibia johntony sp. n.

urn:lsid:zoobank.org:act:7A10DC6F-D50C-4EF7-873A-DDB0AC0AA133

Figs 5, 20, 30, 39

Material examined. Holotype. Female. Congo DR, Bikara, 18 km South of Lubero-Goma, XII.1976, 2100 m, Lejeune, M. (MRAC 159813).

Paratypes: CONGO DR: 1 ♀: Kivu, Mont Lubwe, South-East of Butembo, 13.IV.1971, 2400 m, Lejeune, M. (MRAC 138902); 1 ♀: Musyenene area, Kyondo, 6.IV.1976, 2200 m, Lejeune, M. (MRAC 160091).

Diagnosis. Females of *Zelotibia johntony* are recognized by the epigyne with short, triangular pointed scape. It closely resembles that of *Zelotibia paucipapillata* but the openings leading to the copulatory ducts are much wider and the spermathecae much shorter in the former.

Etymology. The specific name “*johntony*” is a combination of the first names of John Murphy and Tony Russell-Smith who described the genus.

Description. Female holotype (Fig. 5): Total length 4.40, **Carapace** 2.00 long, 1.52 wide. **Carapace** yellow, with yellow striae radiating from fovea. Fovea short red line. **Eyes** AME area dark; anterior row straight, posterior row recurved. AME: 0.07; ALE: 0.08; PME: 0.08; PLE: 0.1; AME-AME: 0.02; AME-ALE: 0.02; PME-PME: 0.07; PME-PL: 0.03. **Chelicerae** yellow; both margins with three teeth. **Sternum** yellow, darker along margin; with brown hairs. **Labium** yellow; longer than broad. **Legs** yellow. Metatarsi III and IV with ventral preening comb at tip. **Abdomen** Dorsum pale grey, with long bristles at anterior end; venter pale yellow. **Spinnerets** pale. **Epigyne** (Figs 20, 30) with short, pointed, triangular scape (Fig. 4) at base with wide atria lodging copulatory openings, situated far to the side. Copulatory ducts short, broad. Spermathecae short, oval, adjacent over ¾ of their length.

| Legs spination | | | | |
|----------------|-----------|-----|-------------------|----------------|
| Legs | F | P | T | Mt |
| I | d2pl1 | - | v1 | v2-2 |
| II | d2pl1rl1 | - | v1 | v2-2 |
| III | d2pl1 rl1 | pl1 | d1 pl2 rl2 v1-2-2 | d2-2 rl3pl3 v2 |
| IV | d2pl1 rl1 | - | d2 pl2rl2 v1-2-2 | d2-2pl3rl3v2-2 |

Male unknown.

Distribution. Known from Kivu in Congo DR (Fig. 39).

Zelotibia kanama sp. n.

urn:lsid:zoobank.org:act:49105AB8-657A-42C9-91C0-D359ADD10E26

Figs 6, 21, 31, 39

Material examined Holotype. Female. RWANDA: Kanama, Gisenyi, grassy vegetation, 01° 40'S 029° 26'E, 11.XII.1985, Jocqué and Nsengimana (MRAC 165717).

Diagnosis. Females of *Zelotibia kanama* are recognized by the epigyne with a narrow triangular central scape and elongate pear-shaped spermathecae.

Etymology. The species name *kanama* is a noun in apposition taken from the type locality.

Description. Female holotype (Fig. 6): Total length 4.80. Carapace 1.80 long and 1.32 wide. **Carapace** yellowish brown with dark grey striae radiating from fovea. *Eyes* AME area pale. Both eye rows straight. Posterior eyes oval. AME: 0.05; ALE: 0.07; PME: 0.07; PLE: 0.08; AME-AME: 0.03; AME-ALE: 0.02; PME-PME: 0.03; PME-
PLE: 0.05. **Chelicerae** yellowish brown; both margins with three teeth. **Sternum** pale yellowish brown, darkened along margin. **Labium** pale yellowish brown, longer than wide. *Legs* yellowish brown. Metatarsi III and IV with ventral preening comb at tip. **Abdomen** Dorsum grey, densely setose in front; venter pale yellowish grey. **Spinnerets** pale yellow. **Epigyne** (Figs 21, 31) in ventral view with acutely pointed, short, hood-like, central scape, Entrance openings situated laterally, entrance ducts curved, short, ending in pear-shaped adjacent spermathecae.

| Leg spination | | | | |
|---------------|-----------|---|-------------------|-------------------|
| Legs | F | P | T | Mt |
| I | d2 | - | - | v2-2 |
| II | d2 | - | v1 | v2-2 |
| III | d2pl1 rl1 | - | d2 pl2 rl2 v1-2-1 | d2-2 pl2 rl1 v2-2 |
| IV | d2pl 1rl1 | - | d1pl2 rl2 v1-2-2 | d2-2 pl3 rl3 v2-2 |

Male unknown.

Distribution. Known only from the type locality, Gisenyi, Rwanda (Fig. 39).

Zelotibia kibira sp. n.

urn:lsid:zoobank.org:act:3EF6B983-8EAF-4282-9B4A-C840A98C13D2

Figs 7, 22, 32, 38

Material examined. Holotype. Female. BURUNDI: Parc National de la Kibira, Mont Musumba, 02° 52'S 029° 30'E, 25.XI.2008, 2100 m, pitfalls, Nzigidahera Benoît (MRAC 226268).

Diagnosis. Female of *Zelotibia kibira* sp. n. is distinguished by the long scape longitudinally divided, separating copulatory openings.

Etymology. The species name “*kibira*” is a noun in apposition taken from the type locality.

Description. **Female** holotype (Fig. 7): Total length 4.80, carapace 1.72 long and 4.68 wide. **Carapace** darker chestnut brown suffused with black and with darker striae radiating from fovea, with tuft of bristles at the posterior end. **Eyes** AME area dark, anterior row recurved, posterior row straight. AME: 0.07; ALE: 0.08; PME: 0.07; PLE: 0.07; AME-AME: 0.02; AME-ALE: 0.02; PME-PME: 0.02; PME-PLE: 0.03. **Chelicerae** chestnut brown covered by dark bristles. **Sternum** pale chestnut brown, with long hairs around margin. **Labium** coloured as sternum. **Legs** coloured as sternum, metatarsi III and IV with ventral preening comb at tip. **Abdomen** dorsally very dark grey, tuft of bristles at anterior end; ventrally pale yellowish. **Spinnerets** pale yellowish. **Epigyne** (Figs 22, 32) in ventral view showing anteriorly a scape longitudinally divided separating lateral copulatory openings.

| Legs spination | | | | |
|----------------|------------|-----|-------------------|-----------------|
| Legs | F | P | T | Mt |
| I | d1 rl1 | - | v1 | v2-2 |
| II | d1 rl1 | - | v1-1-1 | v2 |
| III | d2 pl1 rl1 | pl1 | d2 pl2 rl2 v1-2-2 | d2-2 pl3 rl3 v2 |
| IV | d2 pl1 | - | d pl2 rl2 v1-2-2 | d2 pl3 rl3 v2-2 |

Male unknown.

Distribution. Known only from the type locality Musumba in Kibira National Park, Burundi (Fig. 38).

***Zelotibia lejeunei* sp. n.**
urn:lsid:zoobank.org:act:9491C19C-D592-4CF5-9468-8F5FB7C71F26
Figs 8, 14-16, 23, 33, 40

Material examined. Holotype. Male. Congo DR, Albert National Park, sector Ruwenzori, Kalonge locality, 26.I.1953, 2000 m, Vanschuytbroeck P. and Kekenbosch J. (MRAC 223405).

Paratypes. CONGO DR: 1 ♂: Albert National Park, sector of Ruwenzori, alt. 2000 m, 26.I.1953, Vanschuytbroeck P. and Kekenbosch J. (MRAC 224077); 1 ♀: Bikara sector of Lubero-Goma, XII.1976, 2100 m, Lejeune, M. (MRAC 159842).

Diagnosis. Males of *Zelotibia lejeunei* are recognized by the large, bifid tibial apophysis with one remarkably robust horn. Females have the copulatory openings of the epigyne far in front and to the side.

Etymology. The specific name *lejeunei* refers to the name of person who has collected the material of this species.

Description. **Male** holotype: Total length 4.80, Carapace 2.00 long and 1.56 wide. **Carapace** brownish orange with brown striae radiating from fovea. Fovea short. **Eyes** AME area dark; anterior eye row recurved, posterior row straight. AME: 0.08; ALE: 0.08; PME: 0.08; PLE: 0.08; AME-AME: 0.02; AME-ALE: 0.02; PME-PME: 0.05; PME-PL: 0.02. **Chelicerae** brownish orange. **Sternum** pale brown, dark brown along margin. **Labium** pale brown. longer than broad. **Chelicerae** brown, setose. **Abdomen Dorsum** pale grey, with scutum, long bristles at anterior end; ventrally yellow grey. **Spinnerets** pale yellowish. *Legs* brownish orange. Metatarsi III and IV with ventral preening comb at tip. **Palp** (Figs 14-16) with bifid tibial apophysis, originating in posterior half of segment; external horn longer and more robust than internal one (Fig. 15). DTA with strong base, slightly curved at tip; PTA very robust, tip parallel with DTA (Fig. 16).

| Legs spination | | | | |
|----------------|-----------|-----|------------------|-------------------|
| Legs | F | P | T | Mt |
| I | d1 | - | v1 | v2 |
| II | d1 | - | v1 | v1 |
| III | d2pl1 rl1 | pl1 | d2pl1 rl2 v1-2-2 | d2-2 pl3 rl2 v2-1 |
| IV | d2pl 1rl1 | - | d2pl2 rl2 v1-2-2 | d2-2 pl3 rl3v2-2 |

Female paratype (Fig. 8): Total length 4.80, Carapace 2.00 long, 1.44 wide. Colour pattern similar to male. **Chelicerae**: with three teeth on both margins. **Epi-gyne** (Figs 23, 33) with roughly heart shaped scape anteriorly. Copulatory openings far in front and to the side. Copulatory ducts, broad, with large diverticulum pointing forward, running obliquely towards the globular spermathecae, entering these in front.

| Legs spination | | | | |
|----------------|------------|-----|----------------|------------------|
| Legs | F | P | T | Mt |
| I | d2 rl1 | - | - | v2-2-2 |
| II | d2 rl1 | - | v1 | v2-2v |
| III | d2 pl1 rl1 | pl1 | d2 rl2 v2-2 | d2-2 pl3 rl3 |
| IV | d2 pl1 rl1 | - | pl2 rl2 v1-2-2 | d2-2 pl3 rl3v2-2 |

Distribution. Known from the Ruwenzori and the region of Lubero, Congo DR (Fig. 40).

***Zelotibia major* Russell-Smith & Murphy, 2005:** 109 (descr. ♂)
Figs 9, 24, 34, 40

Material examined. Type material. Holotype. Male. BURUNDI: Rusarenda, 3°07’S 29°33’E 27.V.2002, mountain forest, by hand, Nzigidahera Benoît (MRAC 213753).

Other material. All from BURUNDI, Parc National de la Kibira, Rwegura, Mt Musumba, 02°52’S 029°30’E, Nzigidahera B. site 7, 2100 m, tea plantation: 1♂: 25.V.2008 (INECN); 1 ♂: 25.V.2008 (MRAC 226241); 2♀: 10.II.2008, (INECN); 1♀: 26.I.2008, (INECN); 1♂: 25.X.2008 (INECN); 1 ♀: 25/5/2008 (MRAC 226241); 1 ♂: 10.IV.2008 (MRAC 226332); 1 ♂: 25.IV.2008 (MRAC 226333); 3 ♂: 10.III.2008 (MRAC 226334); 1 ♀: 10.IV.2008 (MRAC 226335); 1 ♀: 25.III.2008, (MRAC 226336); 1 ♂: 25.XI.2008 (MRAC 226337); 2 ♂: 25.II.2008 (MRAC 226338); 2 ♂: 10.VI.2008 (MRAC 226339); 2 ♀: 25.II.2008 (MRAC 226340).

Diagnosis. Females of *Zelotibia major* are recognized by the large copulatory openings, connectd by a transverse groove, in the centre of the epigyne.

Description. Female. (MRAC 226241) (Fig. 9): Total length 6.40, **Carapace** 2.40 long and 1.76 wide. Carapace dark chestnut brown suffused with black and with darker almost black grey striae radiating from fovea. **Eyes** AME area dark, anterior row recurved, posterior row straight. AME: 0.08; ALE: 0.11; PME: 0.11; PLE: 0.11; AME-AME: 0.07; AME-ALE: 0.02; PME-PME: 0.07; PME-PLE: 0.05. **Chelicerae** chestnut brown, outer margin with three 3 small teeth, bordered by dark bristles, inner margin with four larger teeth. **Sternum** dark chestnut brown, with dense cover of dark bristles along margin. **Labium** coloured dark chestnut brown. **Legs** with its of femora, patellae and tibiae dark with yellow stripes; tarsi and metatarsi yellowish brown. Meta-tarsi III and IV with ventral preening comb at tip. **Abdomen** Dorsum very dark grey, densely covered with setae and tuft of long bristles at anterior end; venter grey. **Spinnerets** pale brown suffused with grey. **Epigyne** (Figs 24, 34) with two large copulatory openings connected by groove in centre. Copulatory ducts composed of almost straight short ducts and slightly curved, less thick ducts, leading into medium sized , globular, adjacent spermathecae.

| Legs spination | | | | |
|----------------|------------|-----|-------------------|------------------|
| Legs | F | P | T | Mt |
| I | d2 rl1 | - | - | v2-2 |
| II | d2 rl1 | - | v1 | v2-2 |
| III | d2 pl1rl1 | pl1 | pl2 rl2 v2-2 | d2-2 pl3 rl3 v2 |
| IV | d2 pl1 rl1 | - | d1 pl2 rl2 v1-2-2 | d2-2 pl3rl3 v2-2 |

Distribution. Known only from the type locality, Rusarenda and Musumba in Kibira National Park, Burundi (Fig. 40).

***Zelotibia paucipapillata* Russell-Smith & Murphy, 2005**

Figs 10, 25, 35, 41

Zelotibia similis Russell-Smith & Murphy, 2005 **syn. n.**

Material examined. Type material. Holotype. Female of *Zelotibia similis*: Burundi. Rusarenda, 3°07'S 29°33'E, 25.III.2002 mountain forest, by hand Nzigidahera Benoît (MRAC 213741).

Holotype. Male of *Zelotibia paucipapillata*: Congo D.R. Kivu, Lwiro, 02°15'S 028°48'E, IX.1964, Bafort J. (MRAC 127428).

Other material. All from BURUNDI, Parc National de la Kibira, Rwegura, Mt Musumba, 02°52'S 029°30'E, Nzigidahera B. site 1, mountain heather, *Philippia benguelensis*, 2650 m: 2♀: 25.X.2008 (INECN); 1♀: 25.IV.2008 (INECN); 1♂: 25.II.2008 (INECN); 1♂: 25.VII.2008 (MRAC 226383); 1♂: 10.III.2008 (MRAC 226390); site 2, forest with *Hagenia abyssinica*, 2548m: 3♂, 6♀: 25.II.2008 (INECN); 4♂, 1♀: 25.XI.2008 (INECN); 1♂, 2♀: 10.IX.2008 (INECN); 2♀: 10.III.2008 (INECN); 1♀: 25.III.2008 (INECN); 1♂: 10.X.2008 (INECN); 1♀: 24.IV.2008 (INECN); 1♂: 25.XII.2008 (MRAC 226347); 2♂, 1♀: 25.XII.2008 (MRAC 226351); 1♂: 25.VII.2008 (MRAC 226374); 3♀: 10.II.2008 (MRAC 226381); 1♂: 10.I.2009 (MRAC 226388); 3♀: 25.V.2008 (MRAC 226393); site 3, forest with *Hagenia abyssinica*, 2444 m: 3♀: 10.V.2008 (INECN); 8♂, 1♀: 10.III.2008 (INECN); 7♂, 3♀: 5.II.2008 (INECN); 1♂: 10.XI.2008 (INECN); 1♂, 1♀: 25.VII.2008 (INECN); 4♂, 2♀: 10.XII.2008 (INECN); 1♀: 26.I.2008 (INECN); 1♂: 10.IV.2008 (INECN); 2♂: 25.VIII.2008 (INECN); 2♂, 3♀: 25.X.2008 (INECN); 2♂: 10.VII.2008 (INECN); 2♂, 1♀: 10.IX.2008 (INECN); 2♂: 25.XII.2008 (MRAC 226346); 8♂: 10.II.2008 (MRAC 226349); 2♂: 10.X.2008 (MRAC 226352); 2♂, 1♀: 10.VIII.2008 (MRAC 226354); 2♂, 2♀: 10.VI.2008 (MRAC 226365); 3♂, 1♀: 25.IX.2008 (MRAC 226369); 1♀: 25.V.2008 (MRAC 226385); 2♀: 10.II.2008 (MRAC 226394); site 4, forest with *Macaranga neomildbraediana* and *Polyscias fulva*, 2352m: 2♂: 25.VI.2008 (INECN); 1♂, 2♀: 25.VII.2008 (INECN); 2♂, 2♀: 10.IX.2008 (INECN); 1♀: 25.VI.2008 (INECN); 3♂, 4♀: 25.XI.2008 (INECN); 1♂: 25.IX.2008 (INECN); 1♂: 25.X.2008 (INECN); 1♂, 4♀: 10.I.2009 (MRAC 226348); 1♂, 6♀: 26.I.2008 (MRAC 226350); 3♂, 3♀: 25.IV.2008 (MRAC 226353); 1♂, 1♀: 25.XII.2008 (MRAC 226355); 1♂, 1♀: 25.XII.2008 (MRAC 226356); 1♀: 25.VI.2008 (MRAC 226360); 13♀: 10.II.2008 (MRAC 226361); 8♀: 26.I.2008 (MRAC 226364); 1♂: 10.III.2008 (MRAC 226366); 2♂: 10.X.2008 (MRAC 226367); 7♂, 5♀: 25.II.2008 (MRAC 226370); 13♀: 25.III.2008 (MRAC 226371); 2♂: 10.III.2008 (MRAC 226372); 13♀: 10.IV.2008 (MRAC 226373); 2♂, 1♀: 25.V.2008 (MRAC 226376); 2♂, 2♀: 10.VII.2008 (MRAC 226378); 3♂: 25.III.2008 (MRAC 226379); 2♂, 1♀: 25.VIII.2008 (MRAC 226384); 5♂: 10.IV.2008 (MRAC 226389); 4♂: 10.III.2008 (MRAC 226392); site 5, forest with *Carapa grandiflora* and *Polyscias fulva*, 2252m: 1♂: 25.XI.2008 (INECN); 1♀: 25.VI.2008 (INECN); 6♀: 10.III.2008 (MRAC 226357); 1♂, 2♀: 25.V.2008 (MRAC 226358); 1♂: 10.VII.2008 (MRAC 226362); 1♀: 25.VII.2008 (MRAC 226380); 1♀: 25.IV.2008 (MRAC 226386); 1♀: 12.II.2008 (MRAC 226387);

site 6, forest with *Carapa grandiflora* and *Polyscias fulva*, 2150m: 1♂: 10.IX.2008 (INECN); 1♀: 10.II.2008 (MRAC 226368); site 7, tea plantation, 2100m: 1♀: 10.III.2008 (INECN); 5♂, 4♀: 25.III.2008 (INECN); 2♂: 10.X.2008 (INECN); 3♂: 10.XII.2008 (INECN); 1♀: 25.XI.2008 (INECN); 3♂: 25.X.2008 (MRAC 226359); 3♂: 10.II.2008 (MRAC 226375); 1♀: 10.VI.2008 (MRAC 226377); 1♀: 10.IV.2008 (MRAC 226382); 1♀: 10.II.2008 (MRAC 226391).

Remark. The habitus of the female of *Zelotibia similis* is very similar to that of the male of *Zelotibia paucipapillata*. As specimens have been caught together many times in the Rusarendu area, *Z. similis* is regarded a synonym of *Z. paucipapillata* which has page priority.

Zelotibia subsessa sp. n.

urn:lsid:zoobank.org:act:9B3F05EE-83E5-4424-B812-5CB82DE80EE9

Figs 11, 26, 36, 38

Material examined. Holotype. Female. BURUNDI: Parc National de la Kibira, Mont Musumba, S 02°52' E 029°30', 25.V.2008, 2352 m, pitfalls, Nzigidahera Benoît (MRAC 226242).

Diagnosis. Females of *Zelotibia subsessa* are recognized by the epigyne with a very small anterior scape and the wide frontal depression showing copulatory openings connected by a groove.

Etymology. The specific name *subsessa* is derived from the Latin “*subsessus*” (from *subsistere*) meaning depressed and refers to the large frontal depression of the epigyne.

Description. Female holotype (Fig. 11): Total length 5.60, Carapace 2.00 long, 1.60 wide. **Carapace** brownish orange suffused with brown striae radiating from fovea. **Eyes** AME area dark, anterior row recurved, posterior row straight. AME: 0.08; ALE: 0.08; PME: 0.08; PLE: 0.1; AME-AME: 0.03; AME-ALE: 0.02; PME-PME: 0.05; PME-PLE: 0.05. **Chelicerae** brownish orange, both margins with three teeth, those of retromargin larger. **Sternum** pale brownish orange, darker brown and with long setae. **Labium** coloured pale brownish orange. **Legs** coloured brownish orange. Metatarsi III and IV with ventral preening comb at tip. **Abdomen** Dorsum greyish yellow, with long bristles at anterior end; venter pale yellow. **Spinnerets** pale yellowish. **Epigyne** (Figs 26, 36) with very small anterior scape, large transverse depression provided with copulatory openings, far apart, connected by groove. Copulatory ducts short, broad, sinuous, leading into globular spermathecae, adjacent over 1/2 their length.

| Legs spination | | | | |
|----------------|-----------|-----|------------------|-------------------|
| Legs | F | P | T | Mt |
| I | d2 rl1 | - | - | V2 |
| II | d2 rl1 | - | V2 | V2-1 |
| III | d2 pl1rl1 | pl1 | d2Pl2 rl2 v1-2-2 | d2-2 pl3 rl3 v2 |
| IV | d2 pl1 | - | d2Pl2 rl2 v1-2-2 | d2-2 pl3 rl3 v2-2 |

Male unknown.

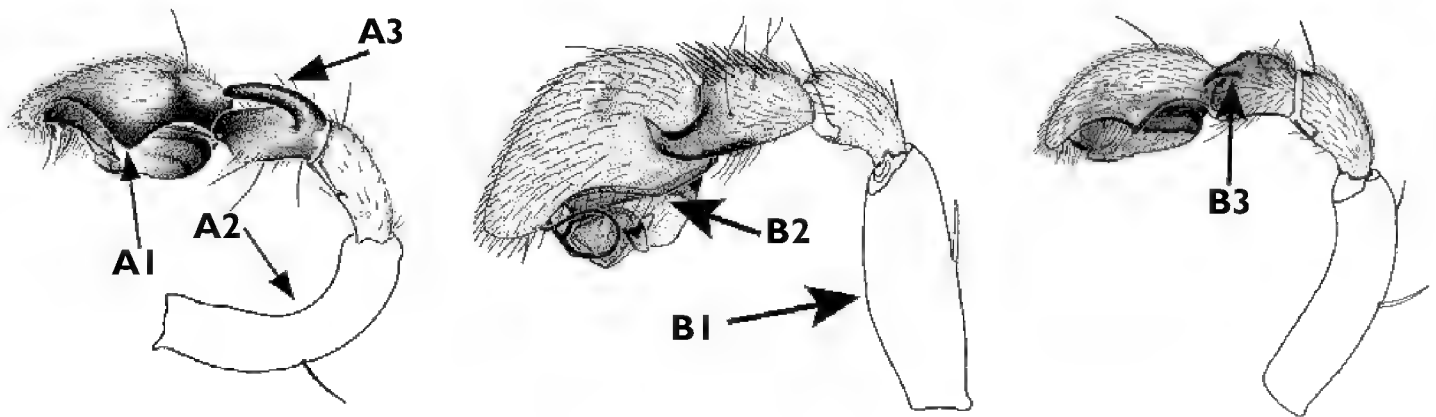
Distribution. Known only from the type locality Mt Musumba in the Kibira National Park, Burundi (Fig. 38).

Key to the species of *Zelotibia*

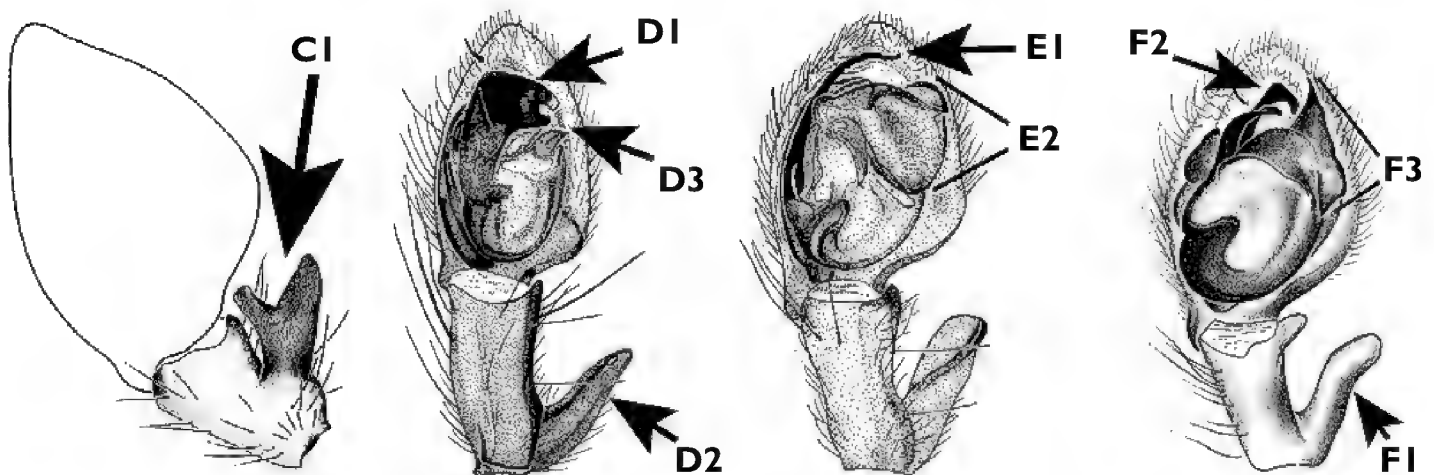
(illustrations modified from Russell-Smith & Murphy, 2005)

Males:

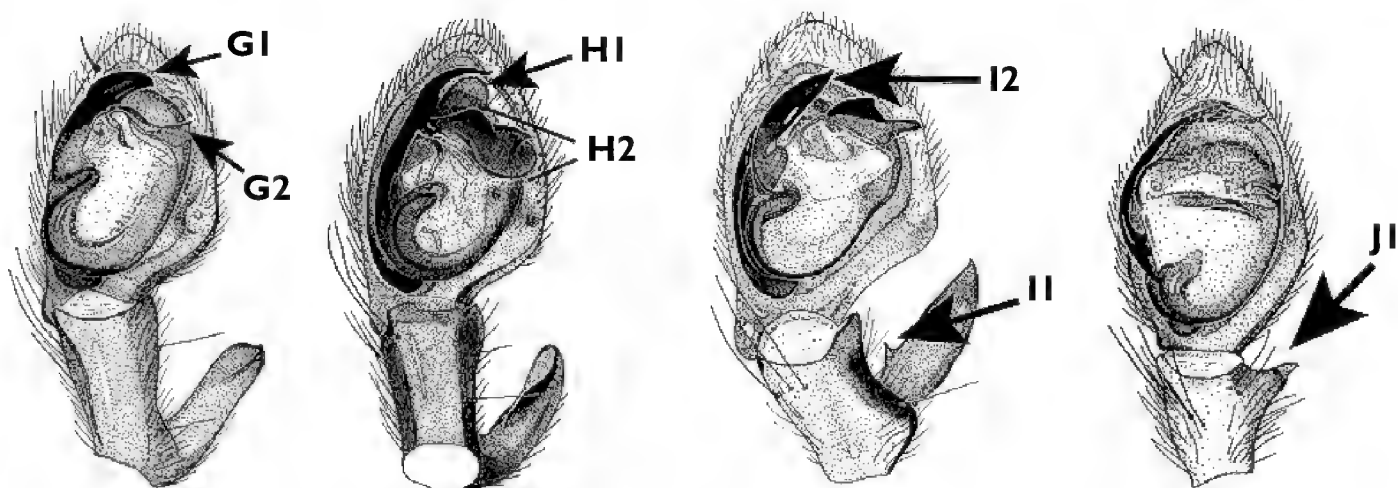
- 1 Male palpal femur clearly curved (A2); retrolateral margin of cymbium with triangular extension (A1) 2
- Male palpal femur straight (B1), retrolateral margin of cymbium straight or slightly curved (except in *Z. dolabra*) (B2)..... 10



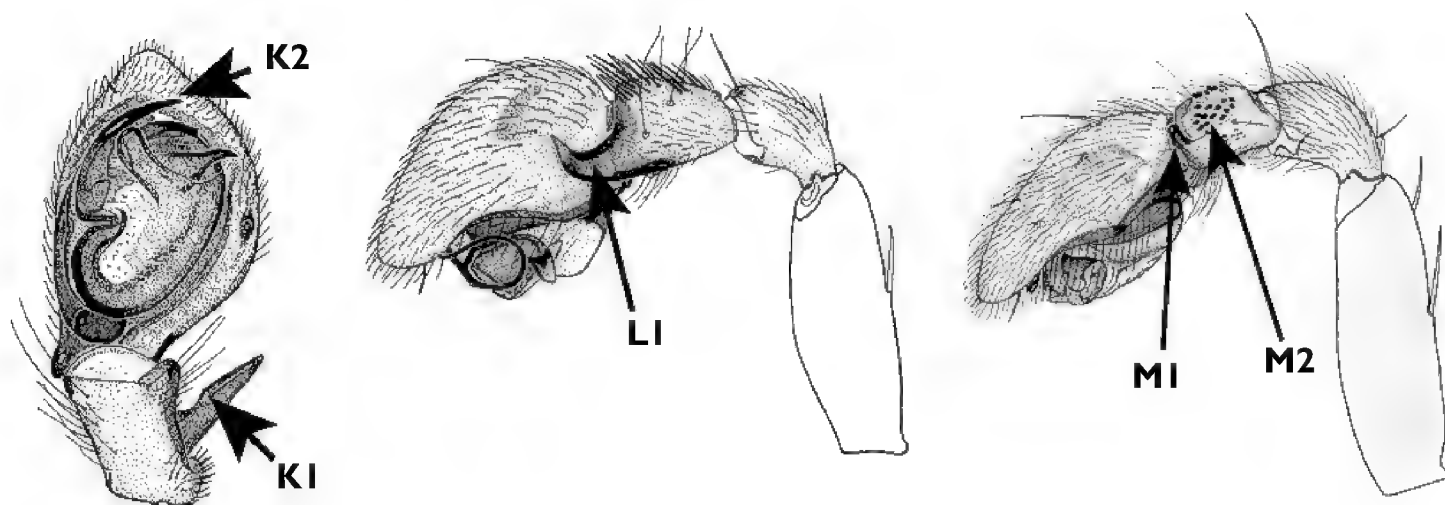
- 2 Tibial apophysis of palp originating on basal part of tibia, scoop-shaped in lateral view, reflexed forward so that it lies parallel to the long axis of the tibia. (A3) 3
- Tibial apophysis not scoop-shaped in lateral view and originating midway of tibia (B3) 8
- 3 Tibial apophysis bifid, with two strong prongs at tip (C1) *Z. lejeunei*
- Tibial apophysis not bifid (D2)..... 4



- 4 Embolus broad, bifid or indented at tip (D1) 5
 – Embolus tapered to sharp tip (E1) 6
 5 Tibial apophysis almost straight as seen from below (D2); embolus flat, with shallow indentation at tip (D1)..... *Z. kaibos*
 – Tibial apophysis slightly curved outward as seen from below (F1); embolus twisted with deep indentation, appearing bifid (F2)..... *Z. curvifemur*
 6 Extremity of embolus beak-shaped (G1); median apophysis small (G2).....
 *Z. mitella*
 – Extremity of embolus sharp (E1); median apophysis large (E2) or with two prongs (H2)..... 7

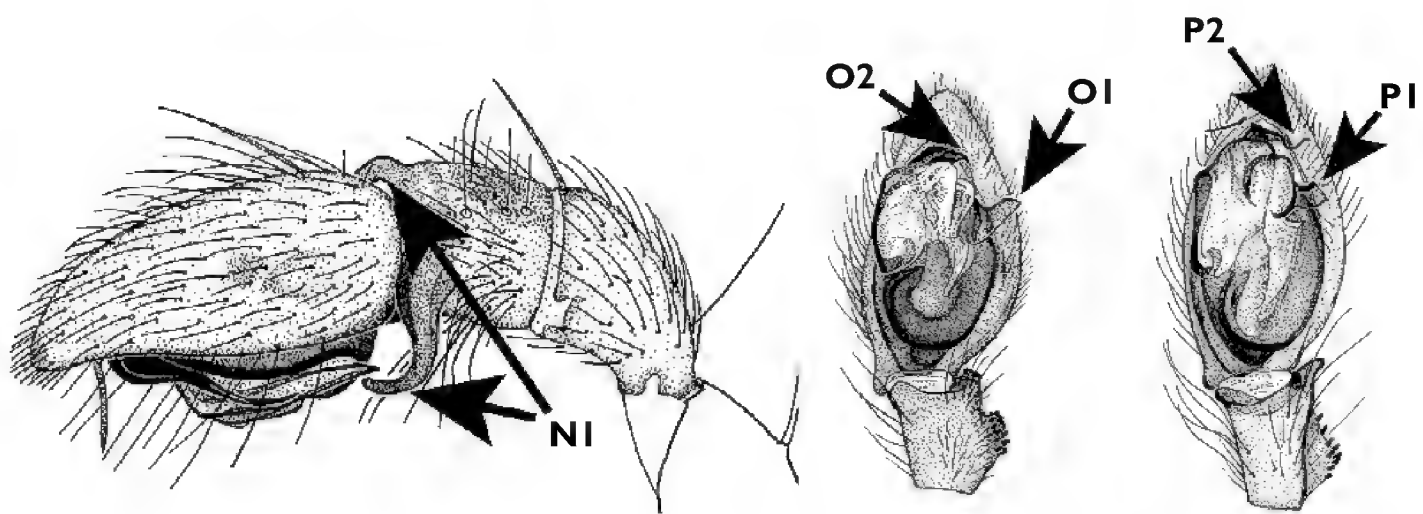


- 7 Tegulum with semitransparent distal extension (H1); median apophysis with two prongs (H2) *Z. major*
 – Tegulum without distal extension; median apophysis occupying half the bulbus (E2)..... *Z. simpula*
 8 Embolus blade shaped in ventral view (I2)..... *Z. cultella*
 – Embolus thin and needle-shaped (K2) 9

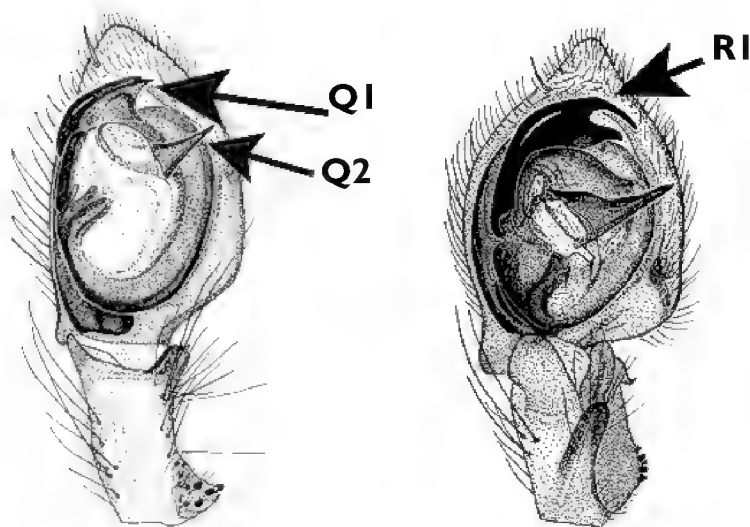


- 9 Tibial apophysis with minute basal tooth (I1)..... *Z. acicula*
 – Tibial apophysis without such a basal tooth (K1)..... *Z. scobina*

- 10 Tibial apophysis of palp, viewed laterally, large and robust, the tip reflexed dorsally through 90° (L1)..... *Z. flexuosa*
 – Tibial apophysis of palp otherwise11
 11 Tibial apophysis of palp small and semi-translucent in lateral view (M1).
 Palpal tibia with a group of small dark papillae on a boss behind apophysis (M2).....13
 – Palpal tibia lacking a group of dark papillae on a boss12
 12 Tibial apophysis of palp minute, triangular (J1), the tip slightly downcurved*Z. filiformis*
 – Palpal tibia with two large apophyses (retro-lateral and pro-lateral) (N1)
 *Z. bicornuta*



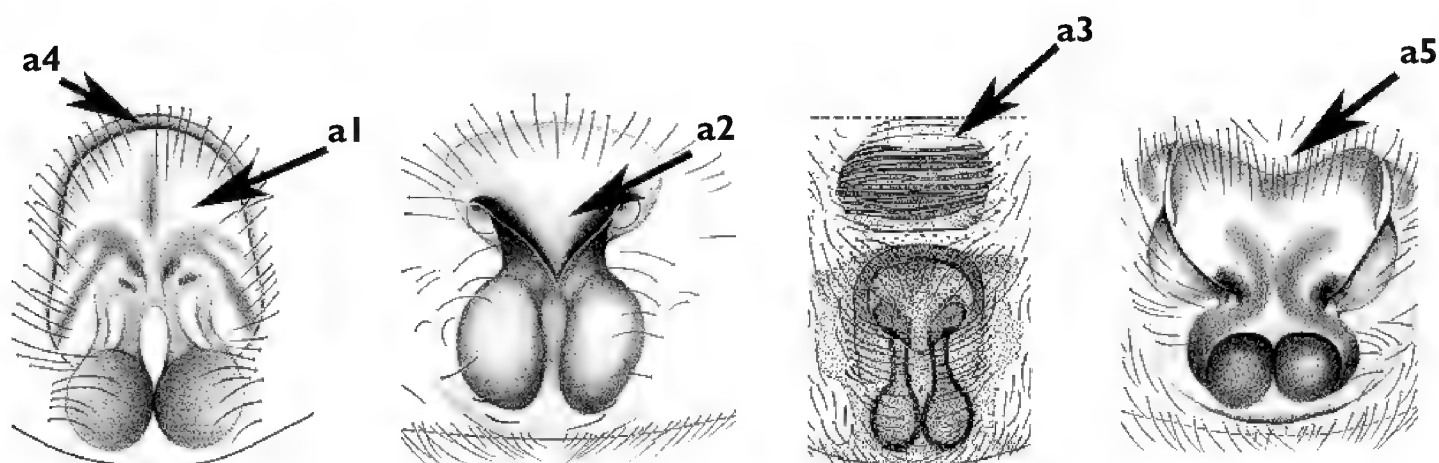
- 13 MA in ventral view clearly truncate at tip (Q1, P1)14
 – MA in ventral view sharply pointed at tip (Q1)15



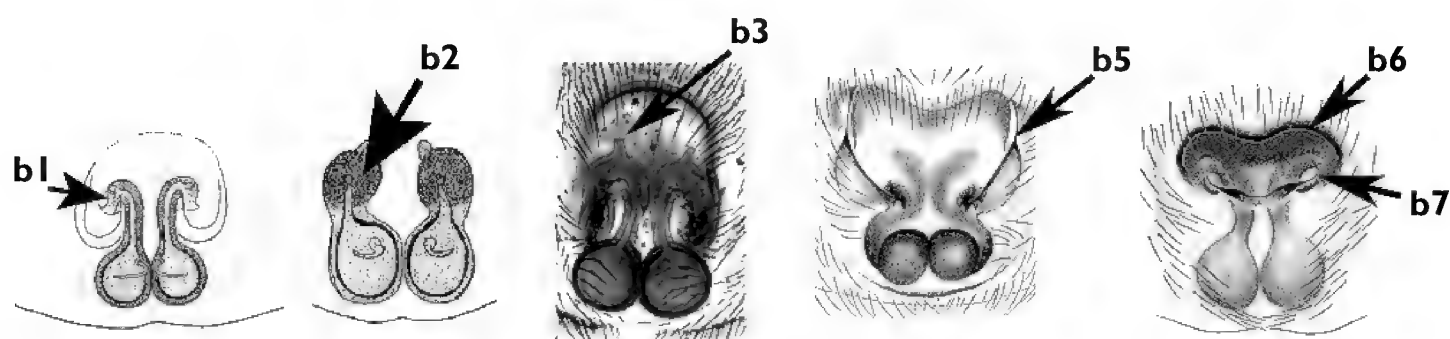
- 14 In ventral view, MA almost twice as long as broad (O1), tip of embolus smoothly curved.(O2).....*Z. papillata*
 – In ventral view, MA only slightly longer than broad (P1), tip of embolus sinuous (P2)*Z. supercilia*
 15 In ventral view, embolus narrow, tip undivided (Q1)*Z. paucipapillata*
 – In ventral view, embolus broad, the tip divided (R1).....*Z. dolabra*

Females:

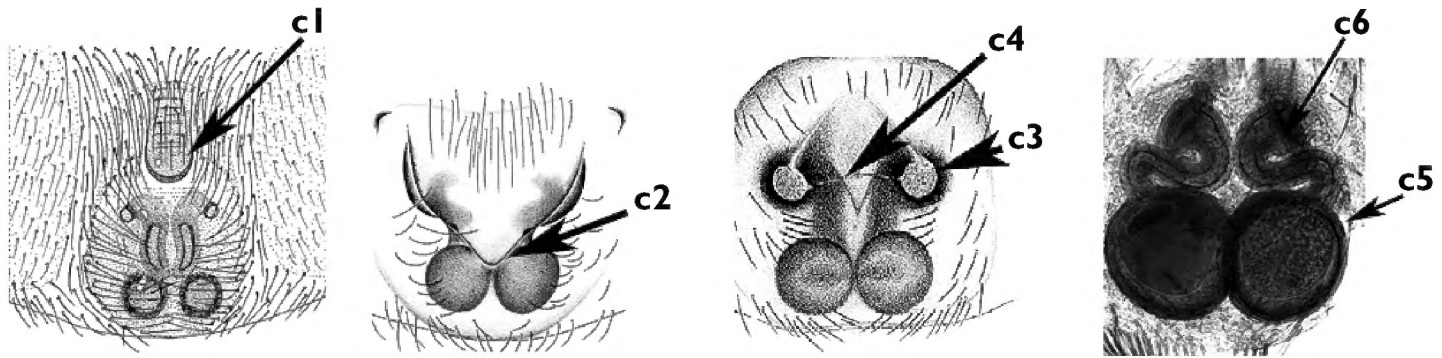
- 1 Epigyne with large hood-shaped atrium anteriorly, lacking a clearly defined scape (a1).....2
- Epigyne without a clearly defined atrium and with a scape (a2)7



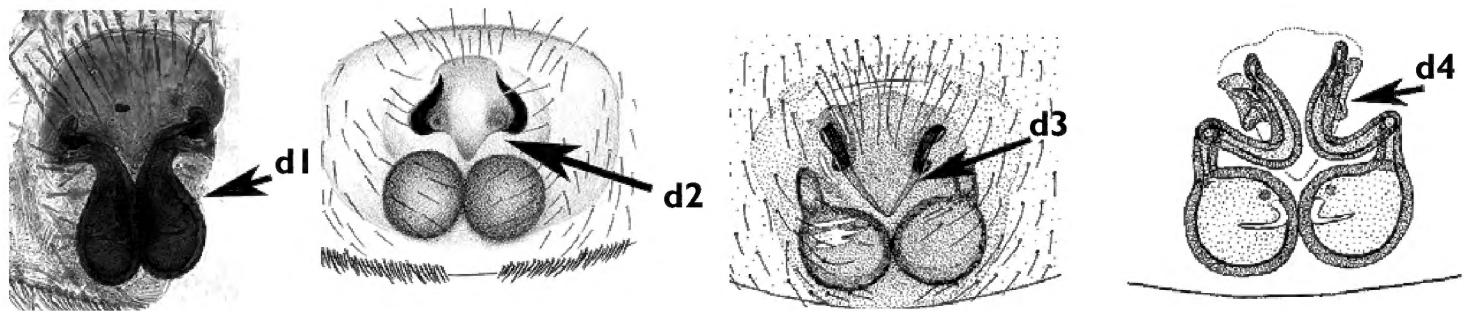
- 2 With area of ridged cuticle anterior to epigyne (a3) *Z. scobina*
- Without area of ridged cuticle anterior to epigyne 3
- 3 Anterior margin of atrium broadly rounded (a4).....4
- Anterior margin incurved (a5)6
- 4 Copulatory ducts reflexed outwards at anterior end and opening at base of atrium (b1)5
- Copulatory ducts not reflexed outwards at anterior end, openings surrounded by blackish area (b2) *Z. simpula*



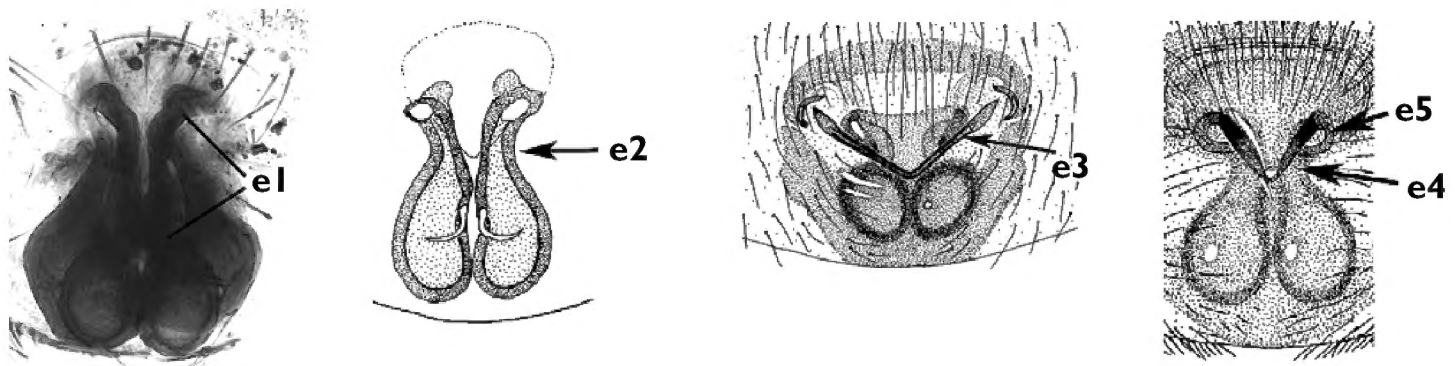
- 5 Copulatory ducts at frontal curve with short diverticulum (b3)
..... *Z. curvifemur*
- Copulatory ducts at frontal curve without diverticulum *Z. mitella*
- 6 Atrium heart-shaped (a5); copulatory openings long lateral slits (b5).....
..... *Z. angelica*
- Atrium kidney-shaped (b6); copulatory openings oval (b7).....
..... *Z. subsessa*
- 7 Epigynal scape tongue-shaped, the tip smoothly rounded (c1).... *Z. bicornuta*
- Epigynal scape not tongue-shaped, the tip pointed (a2) 8



- 8 Epigynal scape large, reaching spermathecae (c2) *Z. lejeunei*
 – Epigynal scape much smaller, not overhanging part of spermathecae (a2)..... 9
 9 Copulatory openings large (c3), connected by transverse groove (c4)
 *Z. major*
 – Copulatory openings smaller, not connected by groove..... 10
 10 Spermathecae globular (c5), copulatory ducts S-shaped (c6) 11
 – Spermathecae oval or flask-shaped (d1) 12

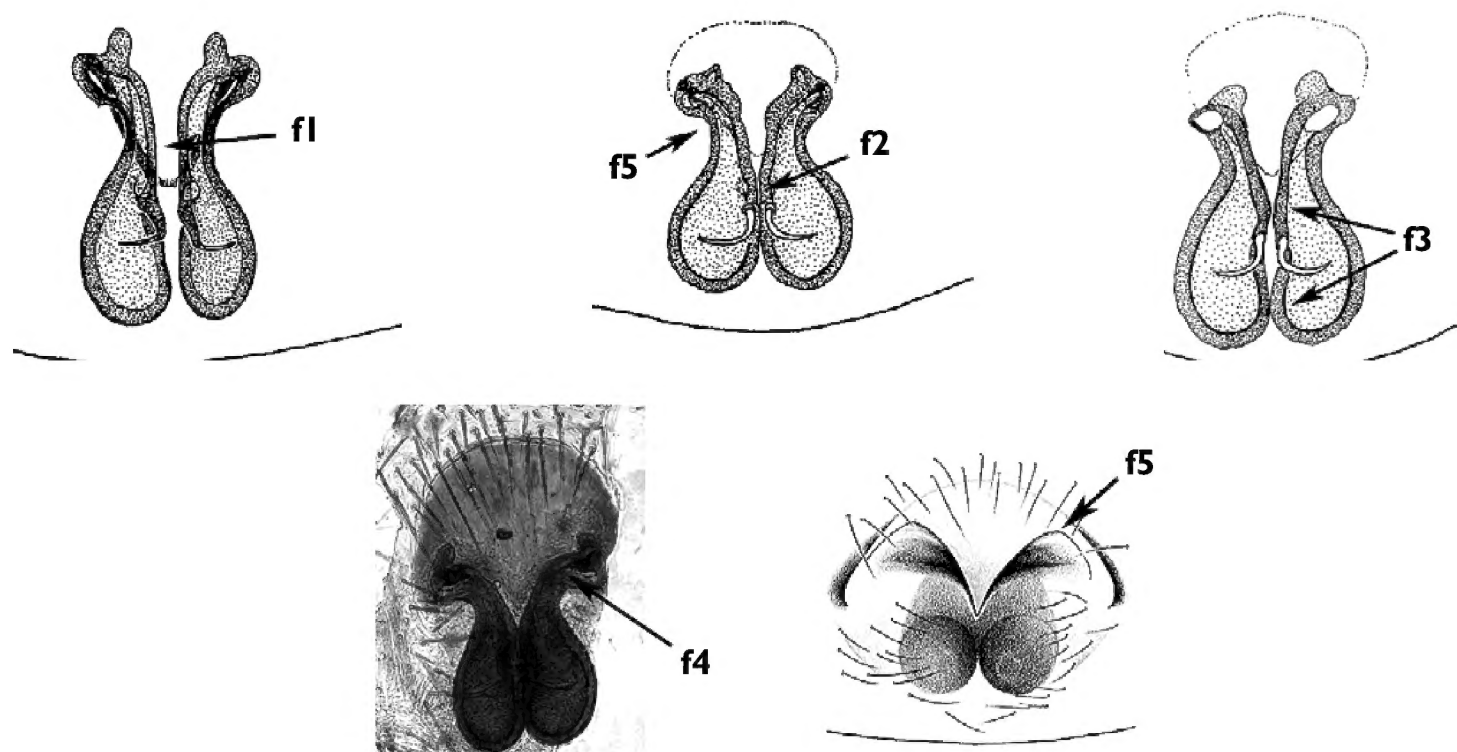


- 11 Posterior margin of epigynal scape with sinuous sides (d2); copulatory ducts strongly curved (c6) *Z. fosseyae*
 – Posterior margin of epigynal scape with straight sides (d3); copulatory ducts less strongly curved (d4) *Z. flexuosa*
 12 Epigynal scape a narrow small triangle; copulatory ducts longer than spermathecae (e1) *Z. kibira*
 – Epigynal scape a larger triangle; copulatory ducts shorter than spermathecae (e2) 13



- 13 Tip of epigynal scape forming an obtuse angle, spermathecae located immediately posterior to tip of scape (e3) *Z. supercilia*
 – Tip of epigynal scape forming an acute angle (e4) 14

- 14 Spermathecae not touching (f1) *Z. papillata*
 – Spermathecae adjacent (f2) 15
 15 Convex median part of spermathecae touching (f2) 16
 – Spermathecae touching in front and behind concave median part (f3).....
 *Z. paucipapillata*
 16 Copulatory ducts curved at right angle between copulatory opening and spermathecae..... *Z. kanama*
 – Curve of copulatory ducts more obtuse (f5) 17
 17 Curve delimiting copulatory openings at base of scape narrow (e5).....
 *Z. filiformis*
 – Curve delimiting copulatory openings at base of scape wide (f5).....
 *Z. johnntony*



Discussion

Although the forests of the Albertine Rift do not figure among the Afrotropical hotspots of biodiversity recognized by Myers et al. (2000) there is little doubt that this region is among the African areas with the highest number of animal species and does deserve the epithet “hotspot”. Myers (2003) and Plumtre et al. (2003, 2007) do indeed mention the Albertine Rift, spanning an area that covers mountain areas in Rwanda, Burundi, Congo DR, Uganda and Kenya, as one of African areas with the highest species richness. However, this statement is almost completely based on the presence of high species numbers of mammals, birds and reptiles, which all include some flagship species among them, like the mountain gorilla (*Gorilla beringei beringei*), the Rwenzori turaco (*Musophaga johnstoni*) or

the three-horned chameleon (*Chamaeleo johnstoni*). But apart from butterflies with the African giant swallowtail (*Papilio antimachus*), invertebrates are not represented at all. Although a wealth of data is available on representatives of the megadiverse arthropod groups like Coleoptera (beetles) or Araneae (spiders), no reports have been produced to illustrate the extreme richness of the area with regard to its invertebrate fauna.

With this paper we draw attention to a group of spiders with a staggering diversity restricted to a particular hotspot. The genus *Zelotibia* now contains 22 species, 19 of which are concentrated in the Albertine Rift (Fig. 37). The only genus that approaches this, as far as number of species in that area is concerned, is *Hortipes* Bosselaers & Ledoux, 1998 (Bosselaers and Jocqué 2000), for which nine species have been recorded from the Albertine Rift. The findings concerning *Zelotibia* presented in this paper indicate that the radiation in the genus is the result of a combination of factors: isolation of populations on different mountains and speciation along an altitudinal gradient as illustrated for the nine species from the Kibira National Park. A study detailing the distribution of spiders along this gradient is in preparation (Table 1).

It is likely that similar studies of altitudinal gradients on nearby mountains will reveal more species of the genus, which is already a unique example of a species flock *sensu* Greenwood (1973) in spiders.

Table 1. Altitudinal distribution of *Zelotibia* species in pitfall traps along an altitudinal gradient on Mt Musumba in the Kibira National Park, Burundi.

| Altitude (m) | Subalpine | | | Afromontane | | | |
|--------------------------|--------------------------------------|---|---|---|---|---|------------------------|
| | 2650 | 2548 | 2444 | 2352 | 2252 | 2150 | 2100 |
| Vegetation | <i>Philippia</i> giant heather | Forest with <i>Hagenia</i> <i>abyssinica</i> | Forest with <i>Hagenia</i> <i>abyssinica</i> | Forest with <i>Macaranga</i> <i>neomild-</i> <i>braediana</i> , <i>Polyscias</i> <i>fulva</i> | Forest with <i>Carapa</i> <i>grandi-</i> <i>flora</i> , <i>Polyscias</i> <i>fulva</i> | Forest with <i>Carapa</i> <i>grandi-</i> <i>flora</i> , <i>Polyscias</i> <i>fulva</i> | Tea planta- tion |
| <i>Z. curvifemur</i> | X | X | X | X | X | X | X |
| <i>Zelotia major</i> | | | | | | | X |
| <i>Z. fosseyae</i> | X | X | | | | | |
| <i>Z. angelica</i> | | | X | | X | | |
| <i>Z. subsessa</i> | | | | X | | | |
| <i>Z. kibira</i> | | | | | | | X |
| <i>Z. paucipapillata</i> | X | X | X | X | X | X | X |
| <i>Z. flexuosa</i> | | | X | X | X | X | X |
| <i>Z. filiformis</i> | X | X | X | X | X | X | |

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